

# Monitored Natural Attenuation Monitoring June 2020 OMC Plant 2 Site (OU4), Waukegan, Illinois WA No. 237-RARA-0528/Contract No. EP-S5-06-01

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## Introduction

This memorandum documents the field activities and results associated with the monitored natural attenuation (MNA) groundwater sampling conducted in June 2020 at the Outboard Marine Corporation (OMC) Plant 2 Site (Operable Unit [OU] 4) in Waukegan, Illinois. Injections were conducted in April and May 2018 and included the treatment of two trichloroethene (TCE) hotspot and three lower-concentration source areas shown in Figure 1. The work is pursuant to Technical Direction Memorandum No. 1 received from EPA (dated July 17, 2017) authorizing a second injection event and pre- and post-injection monitoring to evaluate the performance of the treatment and the MNA sitewide remedy. As specified in EPA's Record of Decision (EPA 2009), the overall remedial action objective for the groundwater remedy is to reduce the concentrations of the chemicals of concern (TCE, cis-1,2-dichloroethene [cis-1,2-DCE], and vinyl chloride) to levels that would allow the groundwater to be used for residential purposes without restrictions.

The monitoring wells in the performance and sitewide well networks and analysis to be performed as part of the monitoring program were documented in the *Quality Assurance Project Plan Addendum III Letter* approved by EPA on April 5, 2019 (CH2M 2019).

## Field Activities

The MNA groundwater sampling event was conducted from June 1 to 4, 2020, and included the following:

- Collected depth to water, water quality measurements, and groundwater samples from 34 performance monitoring wells and 29 sitewide monitoring wells. The sitewide wells include the 10 wells (well nests ST-MW1, ST-MW2, ST-MW3, ST-MW4, and ST-MW5) installed by SulTRAC around the polychlorinated biphenyl (PCB) containment cell and 6 wells (nests MW-3, MW-11, and MW-516) located on the Larsen Marine Services property. Table 1 and Figure 1 show the monitoring well locations.
- Managed groundwater purge water in 5-gallon buckets, and temporarily stored water in tanks and then treated it by the onsite water treatment system.
- The locations (63 locations) were sampled for analysis of volatile organic compounds (VOCs), dissolved metals (arsenic, iron, and manganese), and MNA parameters (alkalinity, anions [chloride, nitrate, nitrite, and sulfide], dissolved gases [methane, ethane, and ethene], and total organic

carbon [TOC]). Twenty-one of the 63 locations were also sampled for PCB analysis. The 21 locations sampled for PCBs included the 10 SulTRAC monitoring wells and 11 sitewide monitoring well locations along the eastern and southern site boundaries, which were previously approved by EPA. Figures 2a and 2b show the contaminant distribution based upon the total detected concentrations of TCE, cis-1,2-DCE, and vinyl chloride in the shallow and deep portions of the aquifer.

## Groundwater Sampling

Groundwater samples were collected using low-flow methods as described in the quality assurance project plan (CH2M 2013). The monitoring wells were purged until the field parameters (temperature, specific conductance, dissolved oxygen, pH, oxidation reduction potential, and turbidity) were stable based on readings from a YSI multi-parameter flow-through cell. The low-flow parameters were recorded for each well (Attachment 1). Figures 3a and 3b show the water level elevations for the shallow and deep portions of the aquifer.

Samples requiring VOC, PCB, and dissolved metals analysis were submitted to a laboratory within EPA's Contract Laboratory Program, while MNA samples were sent to Katahdin Analytical Services of Scarborough, Maine.

## Waste Management

Purge water from the sampling was containerized and treated by the water treatment system related to the onsite consolidation facility.

Personal protective equipment was doubled-bagged and placed with the general waste from the site for disposal.

## Data Management and Evaluation

The field sample data were entered into EPA's Scribe software. The data were used to create chain-of-custody forms and for tracking purposes.

Following sample analysis, the Contract Laboratory Program laboratory transmitted the analytical data and supporting documentation to EPA for validation, after which, an electronic analytical report and an electronic and hard-copy validation reports were sent to CH2M. Following EPA's data validation, the CH2M project chemist reviewed the validation summaries and entered the qualifiers into the project database. Attachment 2 contains the data usability evaluation technical memorandum.

## Analytical Results

Table 2 shows stabilized field parameter results for samples collected in June 2020. Table 3 contains analytical laboratory results for VOC, PCBs, dissolved metals, dissolved gases, TOC, and the MNA parameters.

## Conclusions and Recommendations

The analytical results for TCE, cis-1,2-DCE, and vinyl chloride are relatively similar to the previously collected data from March 2020. The groundwater quality and analytical results from the previous monitoring (April 2014 through December 2016), March 2018 pre-injection, and August 2018 post-injection sampling event can be compared to evaluate the effectiveness of the supplemental treatment. CH2M recommends continuing quarterly groundwater performance monitoring with the purpose of evaluating the overall performance of the enhanced in situ biodegradation and in situ chemical reduction treatment in reducing chlorinated VOC concentrations in the groundwater.

## References

CH2M HILL, Inc. (CH2M). 2013. *Quality Assurance Project Plan, Revision 2, OMC Plant 2 Site, Waukegan, Illinois*. WA No. 105-RARA-0528, Contract No. EP-S5-06-01. March.

CH2M HILL, Inc. (CH2M). 2019. *Quality Assurance Project Plan Addendum III Letter, OMC Plant 2 Site, Waukegan, Illinois*. WA No. 237-RARA-0528, Contract No. EP-S5-06-01. April.

U.S. Environmental Protection Agency (EPA). 2009. *Record of Decision, Outboard Marine Corporation Superfund Site, Waukegan. Lake County, Illinois*. February.

Tables

**Table 1. Summary of Well IDs and Analytes for MNA Groundwater Sampling***June 2020 MNA Performance Monitoring**OMC Plant 2 Site (OU4) - Waukegan, IL*

Well Number	FD	MS/MSD	VOCs	PCBs	MNA <sup>a</sup>	Dissolved Metals	Date Collected
MW-11D	X		X		X	X	6/1/2020
MW-11S			X		X	X	6/1/2020
MW-3D			X	X	X	X	6/1/2020
MW-3S			X		X	X	6/1/2020
MW-501D			X	X	X	X	6/3/2020
MW-501S			X	X	X	X	6/3/2020
MW-513D			X		X	X	6/1/2020
MW-513S			X		X	X	6/1/2020
MW-516D		X	X		X	X	6/2/2020
MW-516S			X		X	X	6/2/2020
MW-528D			X		X	X	6/2/2020
MW-528S			X		X	X	6/1/2020
MW-600D			X		X	X	6/1/2020
MW-600S			X		X	X	6/1/2020
MW-601D			X		X	X	6/4/2020
MW-601S		X	X		X	X	6/4/2020
MW-602D	X		X		X	X	6/3/2020
MW-602S			X		X	X	6/2/2020
MW-603D			X		X	X	6/1/2020
MW-603S			X		X	X	6/1/2020
MW-604D			X		X	X	6/2/2020
MW-604S			X		X	X	6/2/2020
MW-605D	X		X		X	X	6/2/2020
MW-605S			X		X	X	6/2/2020
MW-606D			X		X	X	6/4/2020
MW-606S			X		X	X	6/4/2020
MW-607D			X		X	X	6/4/2020
MW-607S			X		X	X	6/3/2020
MW-610D			X	X	X	X	6/2/2020
MW-610S			X	X	X	X	6/2/2020
MW-612D			X		X	X	6/3/2020
MW-612S	X		X		X	X	6/2/2020
MW-613D			X	X	X	X	6/3/2020
MW-613S			X		X	X	6/3/2020
MW-614D			X		X	X	6/3/2020
MW-614S			X		X	X	6/3/2020
MW-615D			X		X	X	6/1/2020
MW-615S			X		X	X	6/1/2020
MW-619D			X		X	X	6/3/2020
MW-619S			X		X	X	6/3/2020
MW-620D			X		X	X	6/4/2020
MW-620S			X		X	X	6/4/2020

**Table 1. Summary of Well IDs and Analytes for MNA Groundwater Sampling***June 2020 MNA Performance Monitoring**OMC Plant 2 Site (OU4) - Waukegan, IL*

Well Number	FD	MS/MSD	VOCs	PCBs	MNA <sup>a</sup>	Dissolved Metals	Date Collected
MW-621D			X		X	X	6/4/2020
MW-621S	X		X		X	X	6/4/2020
MW-623D			X	X	X	X	6/3/2020
MW-623S			X	X	X	X	6/4/2020
MW-624D			X	X	X	X	6/4/2020
MW-624S	X		X	X	X	X	6/4/2020
W-5	X		X	X	X	X	6/4/2020
ST-MW-1D			X	X	X	X	6/2/2020
ST-MW-1S			X	X	X	X	6/2/2020
ST-MW-2D		X	X	X	X	X	6/3/2020
ST-MW-2S			X	X	X	X	6/2/2020
ST-MW-3D			X	X	X	X	6/3/2020
ST-MW-3S			X	X	X	X	6/3/2020
ST-MW-4D			X	X	X	X	6/3/2020
ST-MW-4S			X	X	X	X	6/4/2020
ST-MW-5D			X	X	X	X	6/4/2020
ST-MW-5S		X	X	X	X	X	6/4/2020
MW-625D			X		X	X	6/2/2020
MW-625S			X		X	X	6/2/2020
MW-626D			X		X	X	6/4/2020
MW-626S			X		X	X	6/3/2020

Notes:

<sup>a</sup>MNA includes alkalinity, anions [chloride, nitrate, nitrite, and sulfate], sulfide, dissolved gases [methane, ethane, and ethene], and TOC.

Field duplicates collected for every 10 samples and MS/MSD for every 20 samples.

One field blank and one equipment blank collected.

FD = field duplicate, ID = identification, MNA = monitored natural attenuation, MS/MSD = matrix spike/matrix spike duplicate, TOC = total organic carbon, VOC = volatile organic compounds

Table 2. Field Parameters, June 2020  
Monitored Natural Attenuation Monitoring - June 2020  
OMC Plant 2 Site (OU4) - Waukegan, IL

		MW-003S	MW-003D	MW-011S	MW-011D	MW-501S	MW-501D	MW-513S	MW-513D	MW-516S	MW-516D	MW-528S	MW-528D	MW-600S	MW-600D	MW-601S	MW-601D
		06/01/2020	06/01/2020	06/01/2020	06/01/2020	06/03/2020	06/03/2020	06/01/2020	06/01/2020	06/02/2020	06/02/2020	06/01/2020	06/02/2020	06/01/2020	06/01/2020	06/04/2020	06/04/2020
Depth to Water	ft btoc	4.43	4.16	4.38	4.32	3.16	3.11	1.78	1.82	1.15	1.31	3.4	3.33	3.41	3.45	3.24	3.36
Dissolved Oxygen	mg/L	0.63	0.53	0.53	0.52	0.45	0.23	2.5	0.33	0.49	0.38	8.17	9.53	0.08	0.04	0.32	0.46
Electrical Conductivity	mS/cm	0.3	5.877	1.411	1.522	0.474	0.612	0.631	1.181	0.879	9.005	0.542	1.249	0.675	2.062	0.61	2.503
Flow Rate	mL/min	250	350	250	300	280	300	300	300	350	300	320	320	240	240	400	400
Oxidation Reduction Potential	mV	14.4	-86.7	-14.7	-127.1	-88.8	-150	131.3	-84.1	23.6	-132.4	101.7	170.4	-83.9	-105.9	-208.6	-83.1
pH	pH units	7.28	7.04	7.27	7.34	7.27	7.55	7.24	7.33	6.89	7.49	7.68	7.06	6.54	6.5	7.13	6.11
Temperature	°C	11.67	11.23	12.06	11.6	14.22	13.33	11.82	11.9	18.4	13.69	14.64	13.34	13.25	12.49	12.73	12.75
Turbidity	NTU	0	0	23.4	6.9	3.1	2.7	0	0	0.5	52.3	0.7	0	1.9	41.2	11.6	8.8

Notes:  
°C = degrees Celsius  
ft btoc = feet below top of casing  
mg/L = milligrams per liter  
mL/min = millimeters per minute  
mS/cm = milliSiemens per centimeter  
mV = millivolts  
NTU = Nephelometric turbidity units

Table 2. Field Parameters, June 2020  
Monitored Natural Attenuation Monitoring - June 2020  
OMC Plant 2 Site (OU4) - Waukegan, IL

		MW-602S	MW-602D	MW-603S	MW-603D	MW-604S	MW-604D	MW-605S	MW-605D	MW-606S	MW-606D	MW-607S	MW-607D	MW-610S	MW-610D	MW-612S	MW-612D
		06/02/2020	06/03/2020	06/01/2020	06/01/2020	06/02/2020	06/02/2020	06/02/2020	06/02/2020	06/04/2020	06/04/2020	06/03/2020	06/04/2020	06/02/2020	06/02/2020	06/02/2020	06/03/2020
Depth to Water	ft btoc	2.97	2.95	2.93	2.52	2.4	2.55	4.23	4.2	3.4	3.89	3.38	3	5.95	5.82	3.4	3.12
Dissolved Oxygen	mg/L	0.22	0.21	0.41	0.33	0.12	6.33	0.36	0.29	0.44	0.44	0.3	0.22	11.35	0.33	0.05	0.09
Electrical Conductivity	mS/cm	0.612	2.87	0.575	3.997	1.04	3.514	0.535	2.164	0.636	3.537	0.4	1.67	0.772	1.468	1.163	3.96
Flow Rate	mL/min	280	300	500	400	200	200	400	500	360	200	200	300	320	300	200	200
Oxidation Reduction Potential	mV	-127.1	-177.1	-67.6	-22.2	-125.1	-114.6	-59	-72	-55.3	-169.9	-197.7	-62.3	189.2	-142	-77.8	-140.3
pH	pH units	7.09	7.75	7.21	6.41	6	6.6	6.89	6.56	7.9	7.21	7.42	7.22	7.33	7.23	5.47	6.38
Temperature	°C	14.3	12.39	13.17	11.61	18.3	18.82	14.48	12.46	14.51	16.96	16.94	13.94	13.29	13.94	15.67	14.15
Turbidity	NTU	0	0.4	4.1	8.4	1.3	141	0	0	9.9	15.4	4.79	0	0.6	18.2	2.8	9.9

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mV = millivolts  
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Table 2. Field Parameters, June 2020  
Monitored Natural Attenuation Monitoring - June 2020  
OMC Plant 2 Site (OU4) - Waukegan, IL

		MW-613S	MW-613D	MW-614S	MW-614D	MW-615S	MW-615D	MW-619S	MW-619D	MW-620S	MW-620D	MW-621S	MW-621D	MW-623S	MW-623D	MW-624S	MW-624D	MW-625S	MW-625D	MW-626S
		06/03/2020	06/03/2020	06/03/2020	06/03/2020	06/01/2020	06/01/2020	06/03/2020	06/03/2020	06/04/2020	06/04/2020	06/04/2020	06/04/2020	06/04/2020	06/03/2020	06/04/2020	06/04/2020	06/02/2020	06/02/2020	06/03/2020
Depth to Water	ft btoc	4.31	4.2	3.33	3	4.48	3.99	4.01	4.05	4.18	4.52	4.59	4.05	3.06	3.21	5.16	5.21	2.74	3.3	5.44
Dissolved Oxygen	mg/L	0.29	0.27	0.11	0.23	0.4	0.25	0.33	0.27	0.43	0.55	0.33	0.33	0.69	0.47	1.51	0.52	0.29	0.26	0.05
Electrical Conductivity	mS/cm	1.357	2.265	0.72	4.564	0.654	3.95	0.364	1.947	1.141	2.984	1.209	4.042	0.516	0.685	0.457	2.305	0.341	2.871	1.137
Flow Rate	mL/min	200	200	210	200	300	300	400	400	260	300	200	100	320	280	300	280	400	400	240
Oxidation Reduction Potential	mV	7.5	-310	-77.9	394.3	-91.4	-314.6	137.3	-196.1	-75.9	-120	-110.6	-90.9	-145.4	-134.4	179.8	-100.1	-97.9	-80.4	-77.7
pH	pH units	7.18	7.35	6.77	7.42	7.21	9.11	7.88	8.71	6.9	6.9	6.78	6.3	7.28	7.48	7.22	7.36	7.92	8.59	4.98
Temperature	°C	12.28	12.56	13.75	17.23	12.81	11.78	12.85	10.92	15.49	15	12.84	13.05	16.73	14.06	16.81	15.28	13.76	12.37	13.26
Turbidity	NTU	3.75	9.84	0	2.9	8.8	6.1	5.35	9.18	1.2	8.6	1.7	12.5	0	2.1	0	0	0	0	0

Notes:  
°C = degrees Celsius  
ft btoc = feet below top of casing  
mg/L = milligrams per liter  
mL/min = millimeters per minute  
mS/cm = milliSiemens per centimeter  
mV = millivolts  
NTU = Nephelometric turbidity units

Table 2. Field Parameters, June 2020  
Monitored Natural Attenuation Monitoring - June 2020  
OMC Plant 2 Site (OU4) - Waukegan, IL

		MW-626D	ST-MW-1S	ST-MW-1D	ST-MW-2S	ST-MW-2D	ST-MW-3S	ST-MW-3D	ST-MW-4S	ST-MW-4D	ST-MW-5S	ST-MW-5D	W-5
		06/04/2020	06/02/2020	06/02/2020	06/02/2020	06/03/2020	06/03/2020	06/03/2020	06/04/2020	06/03/2020	06/04/2020	06/04/2020	06/04/2020
Depth to Water	ft btoc	5.68	1.32	1.11	0.98	0.92	0.7	0.7	2.6	2.56	3.2	3.15	5.35
Dissolved Oxygen	mg/L	0.45	0.51	0.43	0.47	0.45	0.47	0.5	0.54	1.36	0.51	0.45	0.43
Electrical Conductivity	mS/cm	2.505	1.146	2.067	0.701	1.165	1.306	1.275	1.653	1.176	1.088	0.888	1.403
Flow Rate	mL/min	320	300	350	300	350	400	400	200	200	250	375	300
Oxidation Reduction Potential	mV	-145.5	-68	-78.4	-87.1	-132.1	-102.7	-80	-123.6	-12.1	-122.9	-139.8	193
pH	pH units	7.84	6.95	6.99	6.89	7.09	7.33	7.21	7.12	7.38	7.14	7.43	7.29
Temperature	°C	12.44	15.22	14.44	13.3	11.23	13.52	12.7	14.7	13.74	17.11	14.42	12.86
Turbidity	NTU	1.4	1	14.2	5.9	15.9	9.2	8.7	7.9	12.6	0.7	4.1	0

Notes:  
°C = degrees Celsius  
ft btoc = feet below top of casing  
mg/L = milligrams per liter  
mL/min = millimeters per minute  
mS/cm = milliSiemens per centimeter  
mV = millivolts  
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Table 3. Analytical Results, June 2020  
Monitored Natural Attenuation Monitoring - June 2020  
OMC Plant 2 Site (OU4) - Waukegan, IL

Parameter	MCL <sup>a</sup>	Unit	MW-003S 06/01/2020	MW-003D 06/01/2020	MW-011S 06/01/2020	MW-011D 06/01/2020	MW-501S 06/03/2020	MW-501D 06/03/2020	MW-513S 06/01/2020	MW-513D 06/01/2020	MW-516S 06/02/2020	MW-516D 06/02/2020	MW-528S 06/01/2020	MW-528D 06/02/2020	MW-600S 06/01/2020
<b>Polychlorinated Biphenyls (PCBs)</b>															
Aroclor 1016	-	µg/L	-	1 U	-	-	1 U	1 U	-	-	-	-	-	-	-
Aroclor 1221	-	µg/L	-	1 U	-	-	1 U	1 U	-	-	-	-	-	-	-
Aroclor 1232	-	µg/L	-	1 U	-	-	1 U	1 U	-	-	-	-	-	-	-
Aroclor 1242	-	µg/L	-	1 U	-	-	1 U	1 U	-	-	-	-	-	-	-
Aroclor 1248	-	µg/L	-	1 U	-	-	6.2 J+	1 U	-	-	-	-	-	-	-
Aroclor 1254	-	µg/L	-	1 U	-	-	1 U	1 U	-	-	-	-	-	-	-
Aroclor 1260	-	µg/L	-	1 U	-	-	1 U	1 U	-	-	-	-	-	-	-
Aroclor 1262	-	µg/L	-	1 U	-	-	1 U	1 U	-	-	-	-	-	-	-
Aroclor 1268	-	µg/L	-	1 U	-	-	1 U	1 U	-	-	-	-	-	-	-
<b>Volatile Organic Compounds</b>															
1,1,1-Trichloroethane	200	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	5	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	-	µg/L	5 U	5 U	5 U	5 U	1.2 J	7.8	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	7	µg/L	5 U	5 U	5 U	3.6 J	5 U	5 U	5 U	5 U	5 UJ	5 UJ	5 U	5 U	5 U
1,2,3-Trichlorobenzene	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	70	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromo-3-chloropropane	0.2	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane	0.05	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene	600	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	5	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	5	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,3-Dichlorobenzene	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,4-Dichlorobenzene	75	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Butanone	-	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	-	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone	-	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	-	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	5	µg/L	5 U	62	5 U	5 U	5 U	0.96 J	5 U	5 U	5 U	670	5 U	5 U	5 U
Bromochloromethane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane <sup>b</sup>	80	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromoform <sup>b</sup>	80	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromomethane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon Disulfide	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	5	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	100	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chlorodibromomethane <sup>b</sup>	80	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloroethane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloroform <sup>b</sup>	80	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloromethane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	70	µg/L	5 U	5 U	5 U	1200	6	9.5	5 U	5 U	5 UJ	5 UJ	5 U	3.9 J	5 U
cis-1,3-Dichloropropene	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cyclohexane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Dichlorodifluoromethane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	700	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Freon 113	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Isopropylbenzene	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl Acetate	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl tert-butyl ether (MTBE)	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methylcyclohexane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U

Table 3. Analytical Results, June 2020  
Monitored Natural Attenuation Monitoring - June 2020  
OMC Plant 2 Site (OU4) - Waukegan, IL

Parameter	MCL <sup>a</sup>	Unit	MW-003S 06/01/2020	MW-003D 06/01/2020	MW-011S 06/01/2020	MW-011D 06/01/2020	MW-501S 06/03/2020	MW-501D 06/03/2020	MW-513S 06/01/2020	MW-513D 06/01/2020	MW-516S 06/02/2020	MW-516D 06/02/2020	MW-528S 06/01/2020	MW-528D 06/02/2020	MW-600S 06/01/2020
Methylene Chloride	5	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	100	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	5	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Toluene	1,000	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.2	5 U	5 U	5 U
trans-1,2-Dichloroethene	100	µg/L	5 U	5 U	5 U	3.6 J	5 U	5 U	5 U	5 U	5 UJ	5 UJ	5 U	5 U	5 U
trans-1,3-Dichloropropene	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethylene	5	µg/L	5 U	5 U	5 U	2.5 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Trichlorofluoromethane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Vinyl Chloride	2	µg/L	5 U	5 U	7	880	2.7 J	2.6 J	5 U	17	5 U	5 U	5 U	5 U	5 U
Xylene, o <sup>c</sup>	10,000	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Xylenes, m & p <sup>c</sup>	10,000	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
<b>Dissolved Metals</b>															
Arsenic	10	µg/L	37.4	871	10 U	13.7 J+	33.2	64.1	10 U	10 U	10 U	320	10 U	10 U	10 U
Iron		µg/L	100 UJ	11600 J	304 J	5640 J	1610	2120	100 UJ	1670 J	121 J	1350 J	100 UJ	100 UJ	3410 J
Manganese		µg/L	45.6	224	462	46.1	171	62.5	11.9 J	173	549	58	15 U	10 J	546
<b>Wet Chemistry</b>															
Ethane		µg/L	10 U	10 U	10 U	120	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	73 J
Ethene		µg/L	10 U	10 U	2.7 J	250	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	68 J
Methane		µg/L	15	2500	25	2900	98	290	390	550	650	34000	10 U	10 U	17000
Alkalinity, Total (as CaCO3)	-	mg/L	140	1300	270	510 J	270	290	270	290	370	940	170	220	320
Chloride (Cl)	-	mg/L	7.2	770	270	220	7.3 U	32	23	140	21	1600	15	130	9
Nitrate (as N)	-	mg/L	0.095 U	0.2 U	0.065 U	0.05 U	0.05 R	0.12 U	0.12 U	0.05 U	0.05 R	0.05 R	2.2	1.5 J	0.05 U
Nitrite (as N)	-	mg/L	0.1	1.4	0.41	0.5	0.05 R	0.25	0.13	0.25	0.05 R	0.05 R	0.1	0.05 R	0.15
Sulfate	-	mg/L	22	1400	140	54	5.2 U	17	53	130	49	1 UJ	85	150	49
Sulfide	-	mg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Total Organic Carbon	-	mg/L	1 U	12	2.8	8.6	4	3.5	2.9	2.8	1.4	34 N	1 U	1.8	3.4 3.4

Notes:

J indicates the result is an estimated quantity.

U indicates he analytes was not detected above the reported quantitation limit (QL).

UJ indicates the analyte was not detected above the QL and the QL is approximate

<sup>a</sup> Maximum Contaminant Level (MCL), EPA National Primary Drinking Water Regulations, EPA 816-F-09-004, May 2009

<sup>b</sup> MCL is for Total Trihalomethanes, includes the individual trihalomethanes (bromodichloromethane, chlorodibromomethane, chloroform, tribromomethane).

<sup>c</sup> MCL is for Total Xylenes, includes m,p-Xylene and o-Xylene; the MCL for total Xylenes was considered an evaluation surrogate.

µg/L = micrograms per liter

- = no criteria

Greyed cells indicate detection over the MCL

Table 3. Analytical Results, June 2020  
Monitored Natural Attenuation Monitoring - June 2020  
OMC Plant 2 Site (OU4) - Waukegan, IL

Parameter	MCL <sup>a</sup>	Unit	MW-600D 06/01/2020	MW-601S 06/04/2020	MW-601D 06/04/2020	MW-602S 06/02/2020	MW-602D 06/03/2020	MW-603S 06/01/2020	MW-603D 06/01/2020	MW-604S 06/02/2020	MW-604D 06/02/2020	MW-605S 06/02/2020	MW-605D 06/02/2020	MW-606S 06/04/2020	MW-606D 06/04/2020
<b>Polychlorinated Biphenyls (PCBs)</b>															
Aroclor 1016	-	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1221	-	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1232	-	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1242	-	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1248	-	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1254	-	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1260	-	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1262	-	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1268	-	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Volatile Organic Compounds</b>															
1,1,1-Trichloroethane	200	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	5	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	-	µg/L	5 U	5 U	0.9 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	7	µg/L	5 U	5 U	5 U	5 U	17	5 U	4.7 J	5 U	5 U	5 U	2.3 J	5 UJ	5 UJ
1,2,3-Trichlorobenzene	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	70	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromo-3-chloropropane	0.2	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane	0.05	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene	600	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	5	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	5	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,3-Dichlorobenzene	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,4-Dichlorobenzene	75	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Butanone	-	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	16 J+	10 U	62	10 U	10 U	10 U	86
2-Hexanone	-	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone	-	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	-	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	17 J+	10 U	100	10 U	10 U	10 U	40
Benzene	5	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromochloromethane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane <sup>b</sup>	80	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromoform <sup>b</sup>	80	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromomethane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon Disulfide	-	µg/L	5 U	5 U	0.62 J	5 U	1.3 J	5 U	5 U	5 U	5 U	5 U	0.63 J	5 U	0.67 J
Carbon tetrachloride	5	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	100	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chlorodibromomethane <sup>b</sup>	80	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloroethane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloroform <sup>b</sup>	80	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	1.3 J	5 U	5 U
Chloromethane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	70	µg/L	15	5 U	5 U	5 U	9300	4.3 J	1200 J-	35	5 U	100	4000	86 J-	370
cis-1,3-Dichloropropene	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cyclohexane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Dichlorodifluoromethane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	700	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ
Freon 113	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Isopropylbenzene	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ
Methyl Acetate	-	µg/L	12	5 U	140	5 U	33 J	2.7 J	100 U	5 U	5.1	5 U	190	5 U	13
Methyl tert-butyl ether (MTBE)	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methylcyclohexane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U

Table 3. Analytical Results, June 2020  
Monitored Natural Attenuation Monitoring - June 2020  
OMC Plant 2 Site (OU4) - Waukegan, IL

Parameter	MCL <sup>a</sup>	Unit	MW-600D 06/01/2020	MW-601S 06/04/2020	MW-601D 06/04/2020	MW-602S 06/02/2020	MW-602D 06/03/2020	MW-603S 06/01/2020	MW-603D 06/01/2020	MW-604S 06/02/2020	MW-604D 06/02/2020	MW-605S 06/02/2020	MW-605D 06/02/2020	MW-606S 06/04/2020	MW-606D 06/04/2020
Methylene Chloride	5	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	100	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ
Tetrachloroethene	5	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ
Toluene	1,000	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ
trans-1,2-Dichloroethene	100	µg/L	5 U	5 U	5 U	5 U	49	5 U	1.8 J	5 U	5 U	0.91 J	5	5 UJ	1.4 J-
trans-1,3-Dichloropropene	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethylene	5	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	16	5 U	5 U	5 UJ
Trichlorofluoromethane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Vinyl Chloride	2	µg/L	64	5 U	5 U	1.2 J	3800	2.3 J	740	190	14	24	2000	410	460
Xylene, o <sup>c</sup>	10,000	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ
Xylenes, m & p <sup>c</sup>	10,000	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ
<b>Dissolved Metals</b>															
Arsenic	10	µg/L	22.5	14.2 J+	13.1 J+	19.1 J+	14 J+	27.4	10 U	31.7	18.7 J+	13.2 J+	10 U	10 U	30.2
Iron		µg/L	11500 J	2690	115000	3020 J	637	11700 J	125000 J	22100 J	24900 J	3100 J	226000 J	52.8 J	9480
Manganese		µg/L	742	316	3220	221	812	301	1300	272	177	649	2220	129	1540
<b>Wet Chemistry</b>															
Ethane		µg/L	550	80	910	140	28	730	910	820	10 UJ	72	72 J	28	54 J
Ethene		µg/L	2300	10 U	3300	10 U	2100	140 J	22000	450 J	850 J	59	8000 J	97	780 J
Methane		µg/L	30000	13000	27000	15000	5000	20000	23000	22000	320 J	6700 J+	14000 J	22000	24000 J
Alkalinity, Total (as CaCO3)	-	mg/L	810	380	900	290	850	280	1200	460	1800	290	1000	200	2000
Chloride (Cl)	-	mg/L	240	2.3 U	160	12 U	290	3.5	320	66	260	9.8	290	34	240
Nitrate (as N)	-	mg/L	0.05 U	0.05 U	0.05 U	0.13	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 R	0.036 J	0.045 J
Nitrite (as N)	-	mg/L	0.42	0.12 J+	0.05 U	0.25	0.05 U	0.15	0.14	0.31	0.031 J	0.26	0.046 J	0.12	0.12
Sulfate	-	mg/L	12	12 J-	1 U	14	210	14	1 U	10 U	20 J	14	50	87	24
Sulfide	-	mg/L	1 U	1 U	1 U	1 U	1.5 U	1 U	4 U	1 U	1 U	1 U	1 U	1.4 U	1 U
Total Organic Carbon	-	mg/L	29	4 J	500 J	5.2	49	3.7 3.7	900 900	6.3	370 J	5.1 J	620 J	2.7 J	200 J

Notes:

J indicates the result is an estimated quantity.

U indicates he analytes was not detected above the reported quantitation limit (QL).

UJ indicates the analyte was not detected above the QL and the QL is approximate

<sup>a</sup> Maximum Contaminant Level (MCL), EPA National Primary Drinking Water Regulations, EPA 816-F-09-004, May 2009

<sup>b</sup> MCL is for Total Trihalomethanes, includes the individual trihalomethanes (bromodichloromethane, chlorodibromomethane, chloroform, tribromomethane).

<sup>c</sup> MCL is for Total Xylenes, includes m,p-Xylene and o-Xylene; the MCL for total Xylenes was considered an evaluation surrogate.

µg/L = micrograms per liter

- = no criteria

Greyed cells indicate detection over the MCL

Table 3. Analytical Results, June 2020  
Monitored Natural Attenuation Monitoring - June 2020  
OMC Plant 2 Site (OU4) - Waukegan, IL

Parameter	MCL <sup>a</sup>	Unit	MW-607S 06/03/2020	MW-607D 06/04/2020	MW-610S 06/02/2020	MW-610D 06/02/2020	MW-612S 06/02/2020	MW-612D 06/03/2020	MW-613S 06/03/2020	MW-613D 06/03/2020	MW-614S 06/03/2020	MW-614D 06/03/2020	MW-615S 06/01/2020	MW-615D 06/01/2020	MW-619S 06/03/2020	MW-619D 06/03/2020
<b>Polychlorinated Biphenyls (PCBs)</b>																
Aroclor 1016	-	µg/L	-	-	1 U	1 U	-	-	-	10 U	-	-	-	-	-	-
Aroclor 1221	-	µg/L	-	-	1 U	1 U	-	-	-	10 U	-	-	-	-	-	-
Aroclor 1232	-	µg/L	-	-	1 U	1 U	-	-	-	10 U	-	-	-	-	-	-
Aroclor 1242	-	µg/L	-	-	1 U	1 U	-	-	-	10 U	-	-	-	-	-	-
Aroclor 1248	-	µg/L	-	-	1 U	1 U	-	-	-	1100	-	-	-	-	-	-
Aroclor 1254	-	µg/L	-	-	1 U	1 U	-	-	-	10 U	-	-	-	-	-	-
Aroclor 1260	-	µg/L	-	-	1 U	1 U	-	-	-	10 U	-	-	-	-	-	-
Aroclor 1262	-	µg/L	-	-	1 U	1 U	-	-	-	10 U	-	-	-	-	-	-
Aroclor 1268	-	µg/L	-	-	1 U	1 U	-	-	-	10 U	-	-	-	-	-	-
<b>Volatile Organic Compounds</b>																
1,1,1-Trichloroethane	200	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	-	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	5	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	-	µg/L	5 U	500 U	5 U	2.4 J	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	7	µg/L	5 U	640	5 U	2 J	5 U	5 UJ	5 U	500 U	5 U	6.5	5 U	5 UJ	5 U	5 U
1,2,3-Trichlorobenzene	-	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	70	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromo-3-chloropropane	0.2	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane	0.05	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene	600	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	5	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	5	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
1,3-Dichlorobenzene	-	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
1,4-Dichlorobenzene	75	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Butanone	-	µg/L	10 U	1000 U	10 U	10 U	10 U	49	10 U	1000 U	10 U	10 U	10 U	5 J	10 U	10 U
2-Hexanone	-	µg/L	10 U	1000 U	10 U	10 U	10 U	10 U	10 U	1000 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone	-	µg/L	10 U	1000 U	10 U	10 U	10 U	1.3 J	10 U	1000 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	-	µg/L	10 U	1000 U	10 U	10 U	10 U	90	10 U	1000 U	10 U	10 U	10 U	14	10 U	10 U
Benzene	5	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromochloromethane	-	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane <sup>b</sup>	80	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromoform <sup>b</sup>	80	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromomethane	-	µg/L	5 U	500 U	5 U	5 U	5 U	5 UJ	5 U	500 U	5 U	5 U	5 U	5 U	5 UJ	5 U
Carbon Disulfide	-	µg/L	5 U	500 U	5 U	5 U	5 U	5 UJ	5 U	500 U	5 U	5 U	5 U	5 U	5 UJ	5 U
Carbon tetrachloride	5	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	100	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
Chlorodibromomethane <sup>b</sup>	80	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloroethane	-	µg/L	5 U	500 U	5 U	5 U	5 U	5 UJ	5 U	500 U	5 U	5 U	5 U	0.91 J	5 UJ	2.3 J
Chloroform <sup>b</sup>	80	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloromethane	-	µg/L	5 U	500 U	5 U	5 U	5 U	5 UJ	5 U	500 U	5 U	5 U	5 U	5 U	5 UJ	5 U
cis-1,2-Dichloroethene	70	µg/L	5 U	120000	5 U	2100	5 U	5 UJ	5 U	18000	5 U	390	3.1 J	86 J-	5 U	6.2
cis-1,3-Dichloropropene	-	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
Cyclohexane	-	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
Dichlorodifluoromethane	-	µg/L	5 U	500 U	5 U	5 U	5 U	5 UJ	5 U	500 U	5 U	5 U	5 U	5 U	5 UJ	5 U
Ethylbenzene	700	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
Freon 113	-	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
Isopropylbenzene	-	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl Acetate	-	µg/L	5 U	500 U	5 U	5 U	5 U	23	5 U	500 U	5 U	5 U	5 U	53	5 U	5 U
Methyl tert-butyl ether (MTBE)	-	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
Methylcyclohexane	-	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U

Table 3. Analytical Results, June 2020  
Monitored Natural Attenuation Monitoring - June 2020  
OMC Plant 2 Site (OU4) - Waukegan, IL

Parameter	MCL <sup>a</sup>	Unit	MW-607S 06/03/2020	MW-607D 06/04/2020	MW-610S 06/02/2020	MW-610D 06/02/2020	MW-612S 06/02/2020	MW-612D 06/03/2020	MW-613S 06/03/2020	MW-613D 06/03/2020	MW-614S 06/03/2020	MW-614D 06/03/2020	MW-615S 06/01/2020	MW-615D 06/01/2020	MW-619S 06/03/2020	MW-619D 06/03/2020
Methylene Chloride	5	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	100	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	5	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
Toluene	1,000	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
trans-1,2-Dichloroethene	100	µg/L	5 U	490 J	0.99 J	4.7 J	5 U	5 UJ	5 U	500 U	5 U	4 J	5 U	4.8 J-	5 U	5 U
trans-1,3-Dichloropropene	-	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethylene	5	µg/L	5 U	18000	21	5 U	5 U	5 U	2.2 J	17000	5 U	17	5 U	8.2	5 U	5 U
Trichlorofluoromethane	-	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
Vinyl Chloride	2	µg/L	5 U	13000	5 U	2100	1.9 J	5 U	5 U	3500	5 U	560	1.2 J	170	5 U	37
Xylene, o <sup>c</sup>	10,000	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
Xylenes, m & p <sup>c</sup>	10,000	µg/L	5 U	500 U	5 U	5 U	5 U	5 U	5 U	500 U	5 U	5 U	5 U	5 U	5 U	5 U
<b>Dissolved Metals</b>																
Arsenic	10	µg/L	10 U	12.1 J+	10 U	10 U	10.5 J+	16.6 J+	14.8 J+	13 J+	10 U	20.5 J+	16.4 J+	27.9	10 U	10 U
Iron		µg/L	855	1400	100 UJ	5370 J	5390 J	152000	100 U	315	2400 J	464	9390 J	1530 J	100 UJ	611 J
Manganese		µg/L	19.4	7500	4.3 J	80.7	1280	1700	118	253	182	116	560	232	167	17.2
<b>Wet Chemistry</b>																
Ethane		µg/L	5.5 J	1100	10 U	27	450	780 J	10 U	1100	35	4200	78	120 J	10 U	10 U
Ethene		µg/L	3.5 J	7900	10 U	100	23	540 J	10 U	2600	10 U	780	3.9 J	740	10 U	19
Methane		µg/L	1600 ::	12000	10 U	5200	18000	24000 J	240	25000 ::	4100 ::	20000 ::	12000	28000	56	370
Alkalinity, Total (as CaCO3)	-	mg/L	190	420 J	190	360	490	1800	340	500	420	2600	280	1600	71	580
Chloride (Cl)	-	mg/L	4.2 U	290	50	160	60	350	9.4 U	220	16 U	260	3.9	350	10 U	180
Nitrate (as N)	-	mg/L	0.05 R	0.05 U	0.2	0.032 J	0.05 R	0.05 R	0.48	0.05 R	0.05 U	0.05 U	0.091 U	0.05 U	0.05 R	0.05 R
Nitrite (as N)	-	mg/L	0.05 R	0.52	0.21	0.37	0.05 R	0.0061 J	0.2	0.05 R	0.17	0.64	0.16	0.05 U	0.05 R	0.05 R
Sulfate	-	mg/L	35	180	140	180	76	1 U	420	440	25	160	28	1 U	79	150
Sulfide	-	mg/L	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.2 U	1.7 U
Total Organic Carbon	-	mg/L	2.4	23 J	1.6	4.2	5.6 J	1200 J	5.1	28	6 J	83	4.4 4.4	200 200	2.1	27

Notes:

J indicates the result is an estimated quantity.

U indicates he analytes was not detected above the reported quantitation limit (QL).

UJ indicates the analyte was not detected above the QL and the QL is approximate

<sup>a</sup> Maximum Contaminant Level (MCL), EPA National Primary Drinking Water Regulations, EPA 816-F-09-004, May 2009

<sup>b</sup> MCL is for Total Trihalomethanes, includes the individual trihalomethanes (bromodichloromethane, chlorodibromomethane, chloroform, tribromomethane).

<sup>c</sup> MCL is for Total Xylenes, includes m,p-Xylene and o-Xylene; the MCL for total Xylenes was considered an evaluation surrogate.

µg/L = micrograms per liter

- = no criteria

Greyed cells indicate detection over the MCL



Table 3. Analytical Results, June 2020  
Monitored Natural Attenuation Monitoring - June 2020  
OMC Plant 2 Site (OU4) - Waukegan, IL

Parameter	MCL <sup>a</sup>	Unit	MW-620S	MW-620D	MW-621S	MW-621D	MW-623S	MW-623D	MW-624S	MW-624D	MW-625S	MW-625D	MW-626S	MW-626D	ST-MW-1S	ST-MW-1D	ST-MW-2S	ST-MW-2D
			06/04/2020	06/04/2020	06/04/2020	06/04/2020	06/04/2020	06/03/2020	06/04/2020	06/04/2020	06/02/2020	06/02/2020	06/03/2020	06/04/2020	06/02/2020	06/02/2020	06/02/2020	06/03/2020
Polychlorinated Biphenyls (PCBs)																		
Aroclor 1016	-	µg/L	-	-	-	-	1 U	1 U	1 U	1 U	-	-	-	-	67 J+	500 U	1 U	1 U
Aroclor 1221	-	µg/L	-	-	-	-	1 U	1 U	1 U	1 U	-	-	-	-	1 U	500 U	1 U	1 U
Aroclor 1232	-	µg/L	-	-	-	-	1 U	1 U	1 U	1 U	-	-	-	-	1 U	500 U	1 U	1 U
Aroclor 1242	-	µg/L	-	-	-	-	0.41 J	1 U	1 U	1 U	-	-	-	-	1 U	500 U	1 U	1 U
Aroclor 1248	-	µg/L	-	-	-	-	1 U	1 U	1 U	1 U	-	-	-	-	1 U	22000	3	0.19 J
Aroclor 1254	-	µg/L	-	-	-	-	1 U	1 U	1 U	1 U	-	-	-	-	1 U	500 U	1 U	1 U
Aroclor 1260	-	µg/L	-	-	-	-	1 U	1 U	1 U	1 U	-	-	-	-	1 U	500 U	1 U	1 U
Aroclor 1262	-	µg/L	-	-	-	-	1 U	1 U	1 U	1 U	-	-	-	-	1 U	500 U	1 U	1 U
Aroclor 1268	-	µg/L	-	-	-	-	1 U	1 U	1 U	1 U	-	-	-	-	1 U	500 U	1 U	1 U
Volatile Organic Compounds																		
1,1,1-Trichloroethane	200	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	5	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2.3 J	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	7	µg/L	5 U	5 U	5 U	5 UJ	5 UJ	5 U	5 UJ	5 UJ	5 U	100 U	15	5 U	5 U	1.2 J	5 UJ	5 U
1,2,3-Trichlorobenzene	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	70	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromo-3-chloropropane	0.2	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane	0.05	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene	600	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	5	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	5	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
1,3-Dichlorobenzene	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
1,4-Dichlorobenzene	75	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Butanone	-	µg/L	10 U	10 U	10 U	24	10 U	10 U	10 U	10 U	10 U	200 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	-	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	200 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone	-	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	200 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	-	µg/L	10 U	10 U	10 U	26	10 U	10 U	10 U	10 U	10 U	200 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	5	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	8.2	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromochloromethane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane <sup>b</sup>	80	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromoform <sup>b</sup>	80	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromomethane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon Disulfide	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	5	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	100	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
Chlorodibromomethane <sup>b</sup>	80	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloroethane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloroform <sup>b</sup>	80	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloromethane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	70	µg/L	5 U	2 J	5 U	5 UJ	5 UJ	5 U	5 UJ	5 UJ	3.8 J	220	940	5 U	5 U	540	13 J-	5 U
cis-1,3-Dichloropropene	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
Cyclohexane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
Dichlorodifluoromethane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	700	µg/L	5 U	5 U	5 U	5 U	5 UJ	5 U	5 UJ	5 UJ	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
Freon 113	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
Isopropylbenzene	-	µg/L	5 U	5 U	5 U	5 U	5 UJ	5 U	5 UJ	5 UJ	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl Acetate	-	µg/L	1.8 J	5 U	5 U	44	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl tert-butyl ether (MTBE)	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
Methylcyclohexane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U

Table 3. Analytical Results, June 2020  
Monitored Natural Attenuation Monitoring - June 2020  
OMC Plant 2 Site (OU4) - Waukegan, IL

Parameter	MCL <sup>a</sup>	Unit	MW-620S	MW-620D	MW-621S	MW-621D	MW-623S	MW-623D	MW-624S	MW-624D	MW-625S	MW-625D	MW-626S	MW-626D	ST-MW-1S	ST-MW-1D	ST-MW-2S	ST-MW-2D
			06/04/2020	06/04/2020	06/04/2020	06/04/2020	06/04/2020	06/03/2020	06/04/2020	06/04/2020	06/02/2020	06/02/2020	06/03/2020	06/04/2020	06/02/2020	06/02/2020	06/02/2020	06/03/2020
Methylene Chloride	5	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	100	µg/L	5 U	5 U	5 U	5 U	5 UJ	5 U	5 UJ	5 UJ	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	5	µg/L	5 U	5 U	5 U	5 U	5 UJ	5 U	5 UJ	5 UJ	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
Toluene	1,000	µg/L	5 U	5 U	5 U	5 U	5 UJ	5 U	5 UJ	5 UJ	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
trans-1,2-Dichloroethene	100	µg/L	5 U	5 U	5 U	5 UJ	5 UJ	5 U	5 UJ	5 UJ	5 U	100 U	4.2 J	5 U	5 U	6.2	5 UJ	5 U
trans-1,3-Dichloropropene	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethylene	5	µg/L	5 U	0.92 J	5 U	5 U	5 UJ	5 U	5 UJ	5 UJ	5 U	100 U	300	5 U	5 U	5 U	5 U	5 U
Trichlorofluoromethane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
Vinyl Chloride	2	µg/L	5 U	7.2	5 U	2.8 J	5 U	1.4 J	5 U	5.4	13	1800	130	4.9 J	0.95 J	2.5 J	5 U	1.2 J
Xylene, o <sup>c</sup>	10,000	µg/L	5 U	5 U	5 U	5 U	5 UJ	5 U	5 UJ	5 UJ	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
Xylenes, m & p <sup>c</sup>	10,000	µg/L	5 U	5 U	5 U	5 U	5 UJ	5 U	5 UJ	5 UJ	5 U	100 U	5 U	5 U	5 U	5 U	5 U	5 U
<b>Dissolved Metals</b>																		
Arsenic	10	µg/L	23.8	16.4 J+	12	14.1	62	10 U	7.6 J	931	10 U	10 U	15.9 J+	13.3	10 U	13 J+	10.6 J+	12.9 J+
Iron		µg/L	17300	2980	5240	60700	4780	2340 J	100 U	1920	439 J	1880 J	9260	1960	2920 J	6270 J	4610 J	11700 J
Manganese		µg/L	1570	380	166	1190	437	41.8	156	96.9	182	50.9	1120	35.7	124	72.5	757	243
<b>Wet Chemistry</b>																		
Ethane		µg/L	21	28 J	49	120 J	10 U	10 U	10 U	12	50	36 J	21	3 J	10 U	10 U	10 U	10 U
Ethene		µg/L	2.4 J	7.5 J	55	19000 J	10 U	10 U	10 U	10 U	8.5 J	270 J	15	10 U	10 U	10 U	10 U	10 U
Methane		µg/L	22000	16000 J	14000	15000 J	260 B	250	280	470	17000	650 J	11000	5800	23	550	24	3000 J
Alkalinity, Total (as CaCO3)	-	mg/L	410 J	1800	280 J	1300	270	300	200	340	75	840	340	400	250	380	230	270
Chloride (Cl)	-	mg/L	6.7 U	100	190 J	990	7.5 U	38	2.6 U	300	16 U	180	17	810	4.8 U	480 J+	20	110
Nitrate (as N)	-	mg/L	0.05 U	0.05 U	0.05 U	0.05 U	0.038 J	0.05 R	0.1	0.9	0.05 U	0.05 U	0.05 R	0.05 U	0.17	0.05 U	0.13	0.05 U
Nitrite (as N)	-	mg/L	0.21	0.38	0.21	0.16	0.13	0.05 R	0.12	0.56	0.11	0.3	0.05 R	0.31	0.18	0.9	0.22	0.28 J+
Sulfate	-	mg/L	250	190	400 J	720	19	46	65	430	64	370	300	1100	380	200 J+	88	47
Sulfide	-	mg/L	1 U	1 U	1 U	1 U	1.1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.5 U	1 U	1 U	1 U	1 U
Total Organic Carbon	-	mg/L	4.4 J	37 J	4.4 J	580 J	2.2 J	4.9	1.2 J	5 J	1.9	86	5 J	11 J	4	5.5	3.5	4.8

Notes:

J indicates the result is an estimated quantity.

U indicates he analytes was not detected above the reported quantitation limit (QL).

UJ indicates the analyte was not detected above the QL and the QL is approximate

<sup>a</sup> Maximum Contaminant Level (MCL), EPA National Primary Drinking Water Regulations, EPA 816-F-09-004, May 2009

<sup>b</sup> MCL is for Total Trihalomethanes, includes the individual trihalomethanes (bromodichloromethane, chlorodibromomethane, chloroform, tribromomethane).

<sup>c</sup> MCL is for Total Xylenes, includes m,p-Xylene and o-Xylene; the MCL for total Xylenes was considered an evaluation surrogate.

µg/L = micrograms per liter

- = no criteria

Greyed cells indicate detection over the MCL

Table 3. Analytical Results, June 2020  
Monitored Natural Attenuation Monitoring - June 2020  
OMC Plant 2 Site (OU4) - Waukegan, IL

Parameter	MCL <sup>a</sup>	Unit	ST-MW-3S	ST-MW-3D	ST-MW-4S	ST-MW-4D	ST-MW-5S	ST-MW-5D	W-5
			06/03/2020	06/03/2020	06/04/2020	06/03/2020	06/04/2020	06/04/2020	06/04/2020
Polychlorinated Biphenyls (PCBs)									
Aroclor 1016	-	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor 1221	-	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor 1232	-	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor 1242	-	µg/L	1 U	1 U	0.51 J	1 U	130	0.14 J	1 U
Aroclor 1248	-	µg/L	8.7	0.49 J	1 U	0.3 J	1 U	1 U	1 U
Aroclor 1254	-	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor 1260	-	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor 1262	-	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor 1268	-	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Volatile Organic Compounds									
1,1,1-Trichloroethane	200	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	5	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	7	µg/L	5 U	5 U	5 UJ	5 U	5 U	5 UJ	5 U
1,2,3-Trichlorobenzene	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	70	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromo-3-chloropropane	0.2	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane	0.05	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene	600	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	5	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	5	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,3-Dichlorobenzene	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,4-Dichlorobenzene	75	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Butanone	-	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	-	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone	-	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	-	µg/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	5	µg/L	5 U	5 U	5 U	5 U	5.6	58	5 U
Bromochloromethane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane <sup>o</sup>	80	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromoform <sup>o</sup>	80	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromomethane	-	µg/L	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
Carbon Disulfide	-	µg/L	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	5	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	100	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chlorodibromomethane <sup>o</sup>	80	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloroethane	-	µg/L	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
Chloroform <sup>o</sup>	80	µg/L	5 U	5 U	0.98 J	5 U	5 U	5 U	5 U
Chloromethane	-	µg/L	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	70	µg/L	5 U	5 U	5 UJ	5 U	5 U	5 UJ	5 U
cis-1,3-Dichloropropene	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cyclohexane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Dichlorodifluoromethane	-	µg/L	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	700	µg/L	5 U	5 U	5 UJ	5 U	3.3 J	5 UJ	5 U
Freon 113	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Isopropylbenzene	-	µg/L	5 U	5 U	5 UJ	5 U	10	5 UJ	5 U
Methyl Acetate	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl tert-butyl ether (MTBE)	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methylcyclohexane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U

Table 3. Analytical Results, June 2020  
Monitored Natural Attenuation Monitoring - June 2020  
OMC Plant 2 Site (OU4) - Waukegan, IL

Parameter	MCL <sup>a</sup>	Unit	ST-MW-3S	ST-MW-3D	ST-MW-4S	ST-MW-4D	ST-MW-5S	ST-MW-5D	W-5
			06/03/2020	06/03/2020	06/04/2020	06/03/2020	06/04/2020	06/04/2020	06/04/2020
Methylene Chloride	5	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	100	µg/L	5 U	5 U	5 UJ	5 U	5 U	5 UJ	5 U
Tetrachloroethene	5	µg/L	5 U	5 U	5 UJ	5 U	5 U	5 UJ	5 U
Toluene	1,000	µg/L	5 U	5 U	5 UJ	5 U	5 U	5 UJ	5 U
trans-1,2-Dichloroethene	100	µg/L	5 U	5 U	5 UJ	5 U	5 U	5 UJ	5 U
trans-1,3-Dichloropropene	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethylene	5	µg/L	5 U	5 U	5 UJ	5 U	5 U	5 UJ	5 U
Trichlorofluoromethane	-	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Vinyl Chloride	2	µg/L	5 U	5 U	5 U	5 U	5 U	1.1 J	5 U
Xylene, o <sup>c</sup>	10,000	µg/L	5 U	5 U	5 UJ	5 U	4.2 J	0.72 J-	5 U
Xylenes, m & p <sup>c</sup>	10,000	µg/L	5 U	5 U	5 UJ	5 U	0.86 J	5 UJ	5 U
<b><i>Dissolved Metals</i></b>									
Arsenic	10	µg/L	10.2 J+	10 U	11.3	12.8 J+	1040	492	8.8 J
Iron		µg/L	2320 J	1640 J	2830	100 U	3020	1570	7870
Manganese		µg/L	425	495	266	4.7 J	238	50.7	88.4
<b><i>Wet Chemistry</i></b>									
Ethane		µg/L	10 U	10 U	10 U	10 U	10 UJ	3.5 J	10 U
Ethene		µg/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methane		µg/L	150	65	260	190	3000	850	60
Alkalinity, Total (as CaCO3)	-	mg/L	290	320	350 J	200	420	460 J	280
Chloride (Cl)	-	mg/L	75	200	250	63	62 J+	200	740
Nitrate (as N)	-	mg/L	0.05 U	0.05 U	0.045 J	0.31 J	0.05 U	0.05 U	0.15
Nitrite (as N)	-	mg/L	0.22	0.46	0.48	0.05 R	0.2	0.46 J+	1.9
Sulfate	-	mg/L	260	160	160	380	17	92 J-	32
Sulfide	-	mg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Total Organic Carbon	-	mg/L	4.2	2.9	4.2 J	5.5	6.3 J	4.4 J	2.7 J

Notes:

J indicates the result is an estimated quantity.

U indicates he analytes was not detected above the reported quantitation limit (QL).

UJ indicates the analyte was not detected above the QL and the QL is approximate

<sup>a</sup> Maximum Contaminant Level (MCL), EPA National Primary Drinking Water Regulations, EPA 816-F-09-004, May 2009

<sup>b</sup> MCL is for Total Trihalomethanes, includes the individual trihalomethanes (bromodichloromethane, chlorodibromomethane, chloroform, tribromomethane).

<sup>c</sup> MCL is for Total Xylenes, includes m,p-Xylene and o-Xylene; the MCL for total Xylenes was considered an evaluation surrogate.

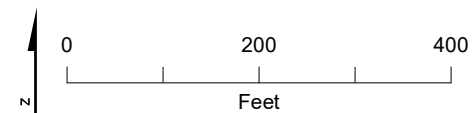
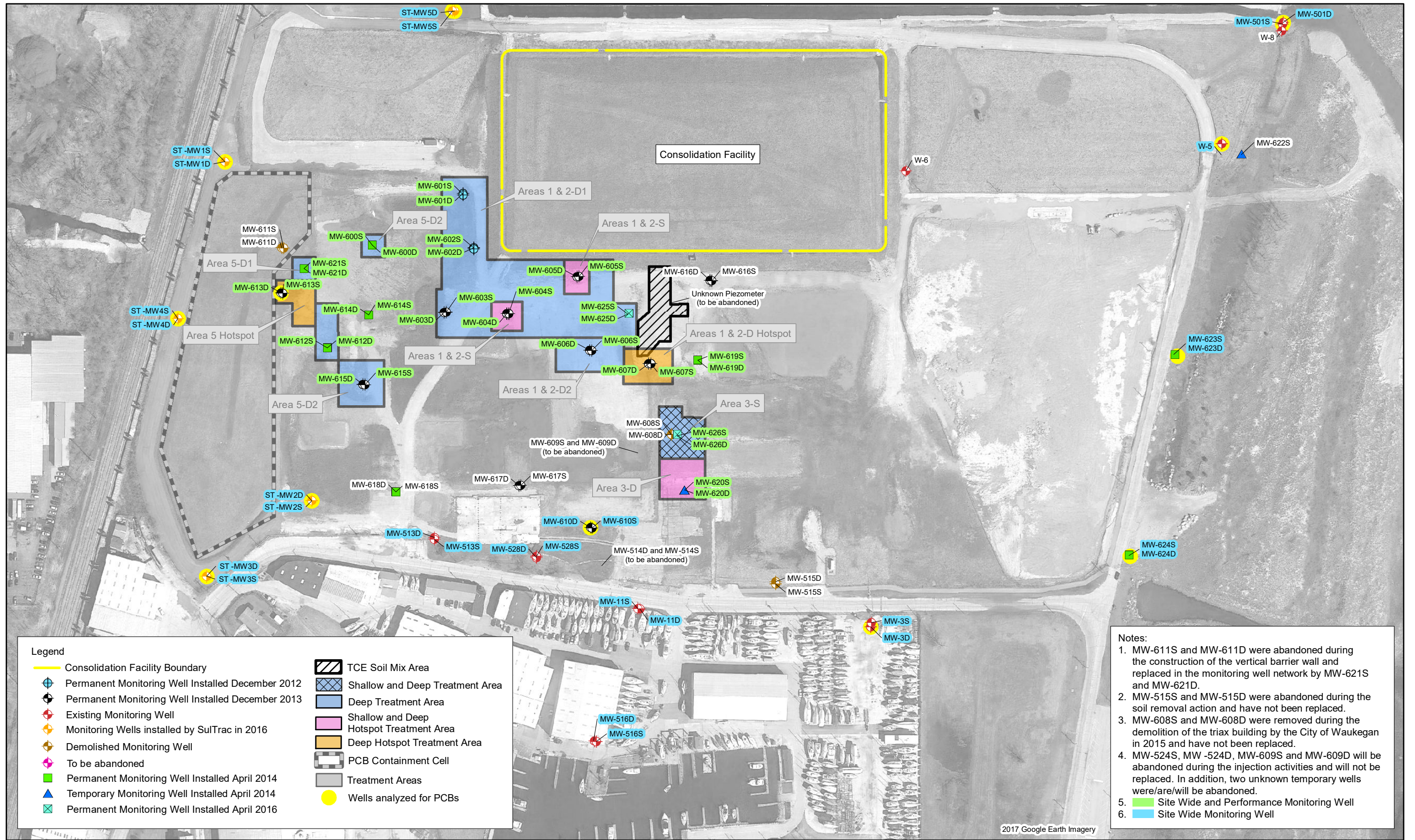
µg/L = micrograms per liter

- = no criteria

Greyed cells indicate detection over the MCL

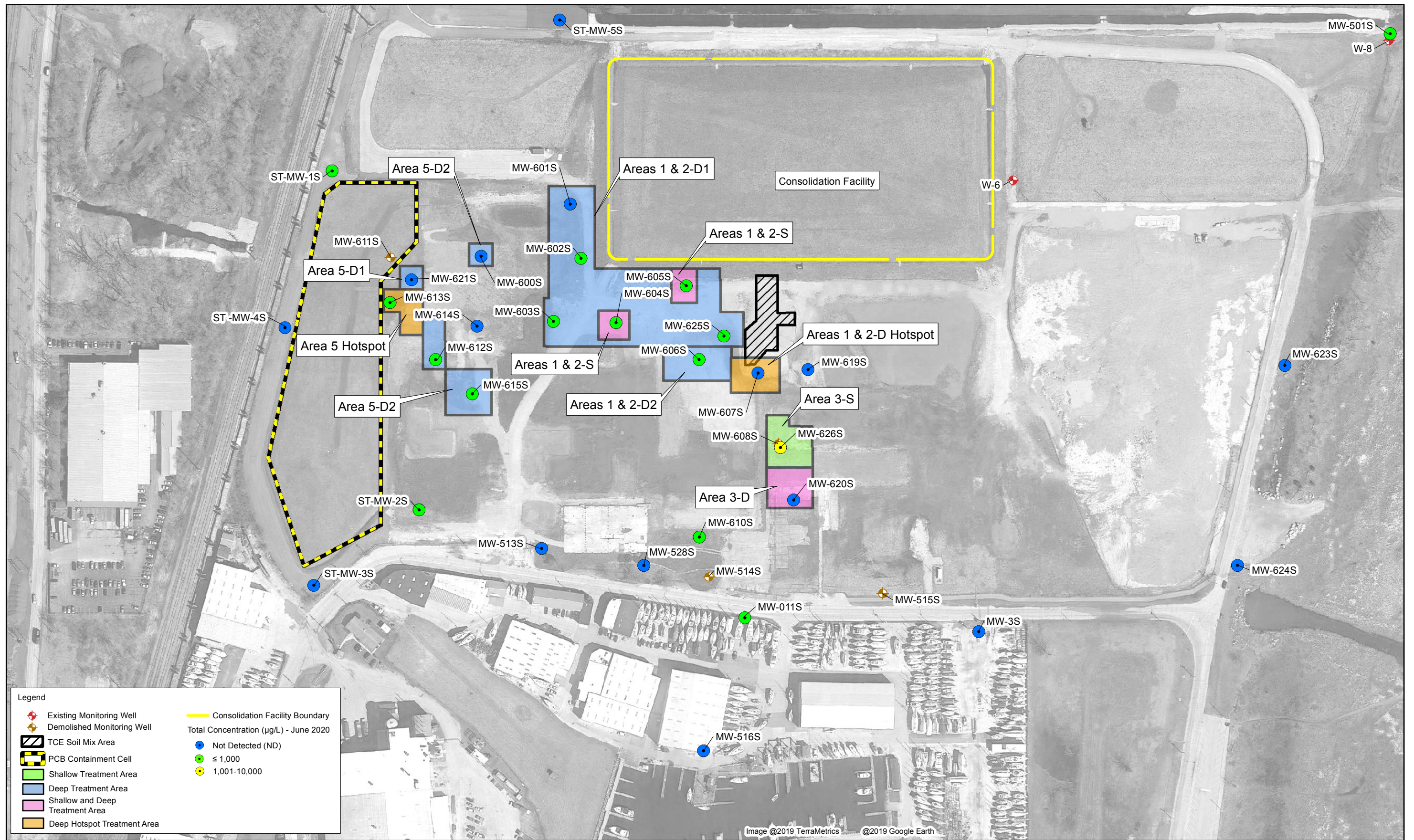
Figures





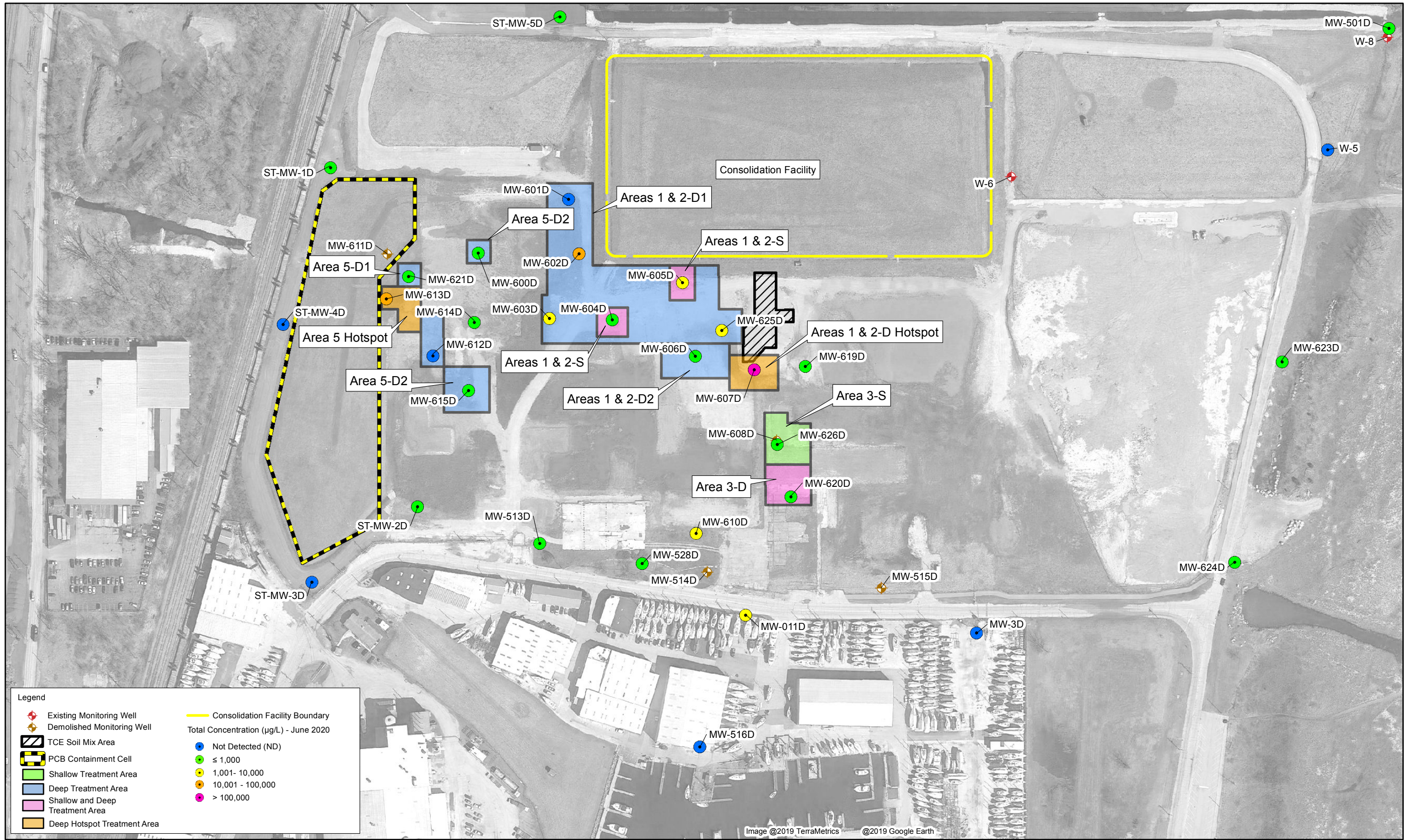
**Figure 1**  
Monitoring Well and Groundwater Sampling Locations  
OMC Plant 2  
Waukegan, IL





**Figure 2A**  
June 2020 Sampling Results - Shallow Wells  
OMC Plant 2  
Waukegan, IL





**Figure 2B**  
 June 2020 Sampling Results - Deep Wells  
 OMC Plant 2  
 Waukegan, IL



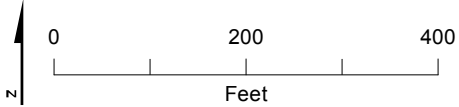
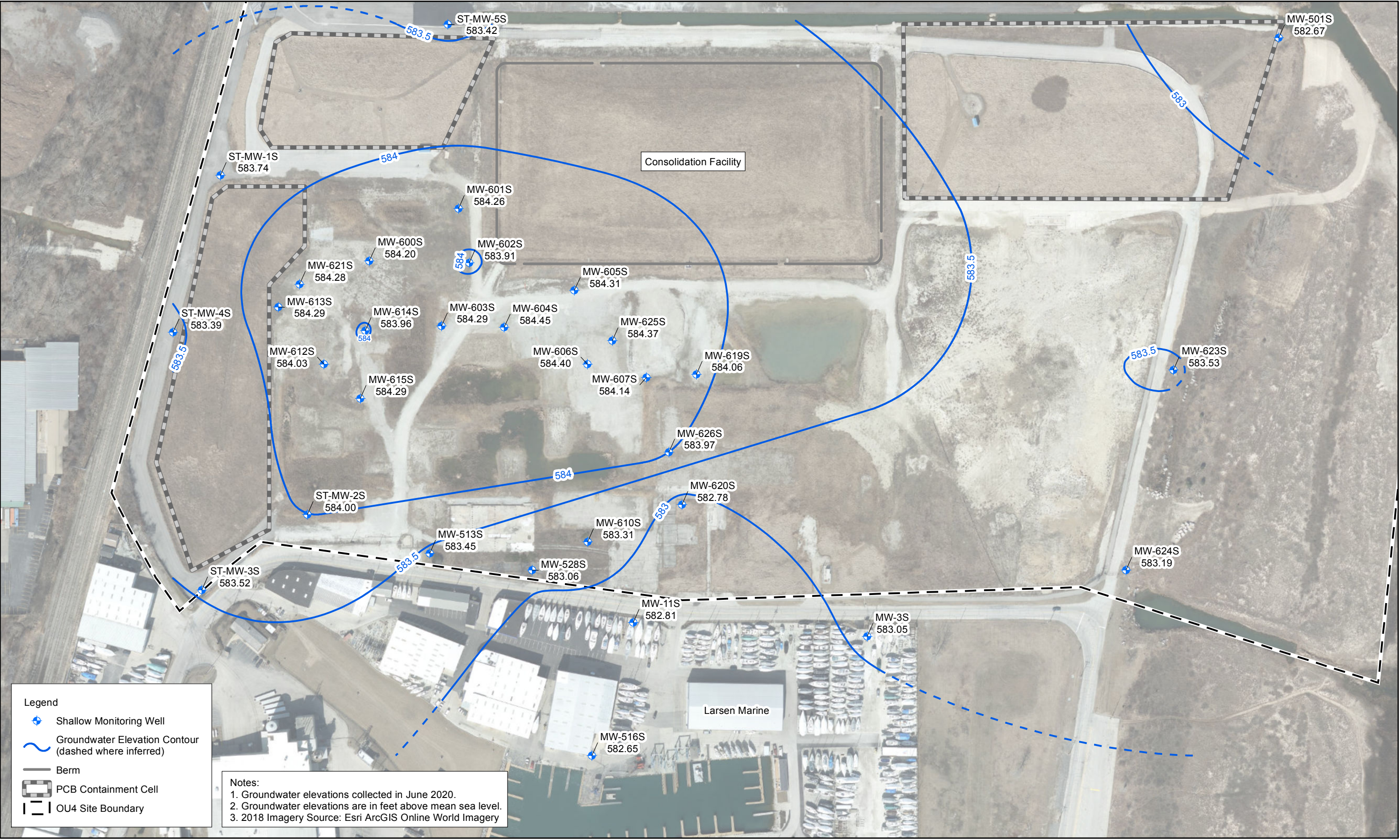
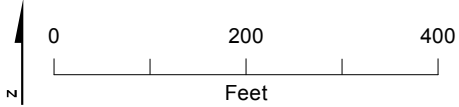


Figure 3A  
June 2020 Shallow Potentiometric Surface Map  
OMC Plant 2  
Waukegan, IL





**Figure 3B**  
June 2020 Deep Potentiometric Surface Map  
OMC Plant 2  
Waukegan, IL



# Attachment 1

## Groundwater Sampling Forms

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-35 Field Crew: J. Graham Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: 65°F Overcast

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/1/20 Time: 1155 Method: Low-Flow  
 Total Well Depth (ft) = 14.84  
 Depth to Water (ft): = 4.41  
 Water Column (ft): = 10.43 1.7  
 Comments: 1 volume

## OBSERVATIONS

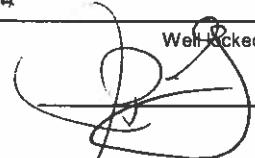
Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.)	DO (mg/L)	ORP (mV)	Specific Conductance (mS/cm)	Temp (°C)	Turbidity (NTU)	Depth to water (feet)
	--	--	+/- 0.1 s.u.	+/- 10%	+/- 10 mV	+/- 3%	+/- 3%	<10 NTU	--
<u>1200</u>	<u>Start Purge</u>								
<u>1205</u>	<u>0.3</u>	<u>250</u>	<u>7.95</u>	<u>2.01</u>	<u>32.0</u>	<u>0.419</u>	<u>11.56</u>	<u>1.0</u>	<u>4.52</u>
<u>1210</u>	<u>0.6</u>	<u>250</u>	<u>7.44</u>	<u>0.97</u>	<u>26.7</u>	<u>0.326</u>	<u>11.46</u>	<u>0.2</u>	<u>4.53</u>
<u>1215</u>	<u>1.0</u>	<u>250</u>	<u>7.30</u>	<u>0.75</u>	<u>23.0</u>	<u>0.302</u>	<u>11.55</u>	<u>1.6</u>	<u>4.52</u>
<u>1220</u>	<u>1.3</u>	<u>250</u>	<u>7.32</u>	<u>0.67</u>	<u>18.9</u>	<u>0.299</u>	<u>11.64</u>	<u>1.8</u>	<u>4.52</u>
<u>1225</u>	<u>1.6</u>	<u>250</u>	<u>7.27</u>	<u>0.62</u>	<u>16.1</u>	<u>0.299</u>	<u>11.65</u>	<u>0.0</u>	<u>4.53</u>
<u>1230</u>	<u>2.0</u>	<u>250</u>	<u>7.28</u>	<u>0.63</u>	<u>14.4</u>	<u>0.300</u>	<u>11.67</u>	<u>0.0</u>	<u>4.53</u>
<u>1235</u>	<u>SAMPLE</u>								

## SAMPLING

Date: 6/1/20 Time: 1235  
 Sample ID: OMC-MW-35 Method of Sample Collection: Grab  
 Analytical Parameters: VOCs, TOC, ALK, Anions, Diss Metals, MEE, Sulfide  
 Q.C. Sample Type: N/A MS/MSD Duplicate Duplicate Sample ID: N/A  
 Q.C. Parameters: N/A  
 Trash picked up? Y Well Picked? Y  
 SIGNED/SAMPLER: 

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-3D Field Crew: S. Graham Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: 65°F Overcast

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/1/20 Time: 1045 Method: Low Flow  
 Total Well Depth (ft) = 31.85  
 Depth to Water (ft): = 4.14  
 Water Column (ft): = 27.71 4.9

Comments:

1 volume

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments:

## FIELD PARAMETERS

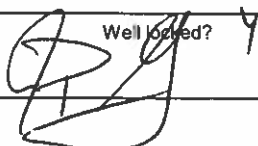
Time	Volume (gal)	Rate (mL/min)	pH (s.u.)	DO (mg/L)	ORP (mV)	Specific Conductance (mS/cm)	Temp (°C)	Turbidity (NTU)	Depth to water (feet)
	--	--	+/- 0.1 s.u.	+/- 10%	+/- 10 mV	+/- 3%	+/- 3%	<10 NTU	--
<u>1050</u>	<u>START PURGE</u>								
<u>1055</u>	<u>0.4</u>	<u>350</u>	<u>6.66</u>	<u>4.72</u>	<u>6.8</u>	<u>6.142</u>	<u>11.62</u>	<u>2.9</u>	<u>4.22</u>
<u>1100</u>	<u>0.9</u>	<u>350</u>	<u>6.94</u>	<u>1.17</u>	<u>-47.7</u>	<u>6.081</u>	<u>11.39</u>	<u>0.4</u>	<u>4.22</u>
<u>1105</u>	<u>1.3</u>	<u>350</u>	<u>6.99</u>	<u>0.79</u>	<u>-65.2</u>	<u>5.938</u>	<u>11.82</u>	<u>1.4</u>	<u>4.22</u>
<u>1110</u>	<u>1.8</u>	<u>380</u>	<u>7.01</u>	<u>0.67</u>	<u>-72.6</u>	<u>5.906</u>	<u>11.26</u>	<u>0.4</u>	<u>4.22</u>
<u>1115</u>	<u>2.2</u>	<u>350</u>	<u>7.02</u>	<u>0.60</u>	<u>-79.6</u>	<u>5.891</u>	<u>11.26</u>	<u>0.0</u>	<u>4.22</u>
<u>1120</u>	<u>2.7</u>	<u>350</u>	<u>7.03</u>	<u>0.56</u>	<u>-84.4</u>	<u>5.880</u>	<u>11.26</u>	<u>0.6</u>	<u>4.22</u>
<u>1125</u>	<u>3.1</u>	<u>350</u>	<u>7.04</u>	<u>0.53</u>	<u>-86.7</u>	<u>5.877</u>	<u>11.23</u>	<u>0.0</u>	<u>4.22</u>
<u>1130</u>	<u>SAMPLE</u>								

## SAMPLING

Date: 6/1/20 Time: 1130  
 Sample ID: OMC-MW-3D Method of Sample Collection: Grab  
 Analytical Parameters: VOCs, 4IC, Anions, TOC, PCBs, Diss Metals, MEE, Sulfide  
 Q.C. Sample Type: N/A MS/MSD Duplicate Duplicate Sample ID: N/A  
 Q.C. Parameters: N/A

Trash picked up? Y Well logged? Y

SIGNED/SAMPLER:



# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-115

Field Crew: J. Graham

Purpose of Sampling:

OMC Quarterly Sampling

Site: OMC

Field Conditions: 65°F Sunny

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/1/20 Time: 1504 Method: low-flow

Total Well Depth (ft) = 13.83

Depth to Water (ft): = 4.22

Water Column (ft): = 9.61 1.5

Comments:

1 volume

## OBSERVATIONS

Odor: None Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments: Water is rusty orange

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
<u>1505</u>	<u>START PURGE</u>								
<u>1510</u>	<u>0.8</u>	<u>250</u>	<u>7.77</u>	<u>2.62</u>	<u>30.7</u>	<u>1.346</u>	<u>12.85</u>	<u>175.9</u>	<u>4.25</u>
<u>1515</u>	<u>0.6</u>	<u>250</u>	<u>7.42</u>	<u>1.01</u>	<u>16.5</u>	<u>1.366</u>	<u>12.18</u>	<u>119.8</u>	<u>4.25</u>
<u>1520</u>	<u>1.0</u>	<u>250</u>	<u>7.34</u>	<u>0.70</u>	<u>-23.5</u>	<u>1.329</u>	<u>11.94</u>	<u>53.6</u>	<u>4.25</u>
<u>1525</u>	<u>1.3</u>	<u>250</u>	<u>7.30</u>	<u>0.62</u>	<u>-13.2</u>	<u>1.353</u>	<u>11.89</u>	<u>44.0</u>	<u>4.25</u>
<u>1530</u>	<u>1.6</u>	<u>250</u>	<u>7.27</u>	<u>0.57</u>	<u>-12.1</u>	<u>1.388</u>	<u>11.93</u>	<u>35.1</u>	<u>4.25</u>
<u>1535</u>	<u>2.0</u>	<u>250</u>	<u>7.27</u>	<u>0.58</u>	<u>-12.4</u>	<u>1.405</u>	<u>11.98</u>	<u>32.8</u>	<u>4.25</u>
<u>1540</u>	<u>2.3</u>	<u>250</u>	<u>7.27</u>	<u>0.53</u>	<u>-14.7</u>	<u>1.411</u>	<u>12.06</u>	<u>23.4</u>	<u>4.25</u>
<u>1545</u>	<u>SAMPLE</u>								

## SAMPLING

Date: 6/1/20

Time: 1545

Sample ID: OMC-MW-115

Method of Sample Collection: grab

Analytical Parameters: VOCS, TOC, Sulfide, ALK, Anions, MEE, Diss Metals


Q.C. Sample Type: N/A MS/MSD Duplicate Duplicate Sample ID: N/A

Q.C. Parameters: N/A

Trash picked up? Y

Well locked? Y

SIGNED/SAMPLER:



# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-11D Field Crew: J. Graham Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: 65°F Sunny

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/1/20 Time: 1320 Method: low-flow  
 Total Well Depth (ft) = 30.67  
 Depth to Water (ft) = 4.21  
 Water Column (ft): 26.46 4.2  
 Comments: 1 volume

## OBSERVATIONS

Odor: None Low High H<sub>2</sub>S Fuel Like Other:

Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) ±0.1 s.u.	DO (mg/L) ±10%	ORP (mV) ±10 mV	Specific Conductance (mS/cm) ±3%	Temp (°C) ±3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
<u>1325</u>	<u>START PURGE</u>								
<u>1330</u>	<u>0.4</u>	<u>300</u>	<u>7.41</u>	<u>2.65</u>	<u>-102.5</u>	<u>1.333</u>	<u>12.37</u>	<u>1040</u>	<u>4.30</u>
<u>1335</u>	<u>0.8</u>	<u>300</u>	<u>7.29</u>	<u>0.96</u>	<u>-115.0</u>	<u>1.338</u>	<u>11.82</u>	<u>7.9</u>	<u>4.30</u>
<u>1340</u>	<u>1.2</u>	<u>300</u>	<u>7.31</u>	<u>0.71</u>	<u>-119.5</u>	<u>1.476</u>	<u>11.59</u>	<u>3.4</u>	<u>4.31</u>
<u>1345</u>	<u>1.6</u>	<u>300</u>	<u>7.32</u>	<u>0.64</u>	<u>-122.0</u>	<u>1.456</u>	<u>11.50</u>	<u>3.8</u>	<u>4.31</u>
<u>1350</u>	<u>2.0</u>	<u>300</u>	<u>7.32</u>	<u>0.59</u>	<u>-123.4</u>	<u>1.485</u>	<u>11.64</u>	<u>5.7</u>	<u>4.31</u>
<u>1355</u>	<u>2.4</u>	<u>300</u>	<u>7.33</u>	<u>0.55</u>	<u>-124.4</u>	<u>1.524</u>	<u>11.61</u>	<u>8.2</u>	<u>4.31</u>
<u>1400</u>	<u>2.8</u>	<u>300</u>	<u>7.34</u>	<u>0.52</u>	<u>-127.1</u>	<u>1.522</u>	<u>11.60</u>	<u>6.9</u>	<u>4.31</u>
<u>1405</u>	<u>SAMPLE</u>								

## SAMPLING

Date: 6/1/20 Time: 1405  
 Sample ID: OMC-MW-11D Method of Sample Collection: grab  
 Analytical Parameters: DOC, TOC, Sulfide, Alk, Anions, MEG, Diss Metals  
 Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID: OMC-MW-11D-R @ 1410  
 Q.C. Parameters: SAME AS PARENT  
 Trash picked up? Y Well locked? Y  
 SIGNED/SAMPLER: [Signature]

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-5015 Field Crew: Matt G Purpose of Sampling: OMC Quarterly Sampling  
Site: OMC Field Conditions: Overcast, 72°F

## WELL CONDITION

Well Pad	Acceptable	Not Acceptable	Explain: N/A
Protective Casing	Acceptable	Not Acceptable	Explain:
Well Casing	Acceptable	Not Acceptable	Explain:
Locking Cap	Acceptable	Not Acceptable	Explain: N/A
Well Label (outside)	Acceptable	Not Acceptable	Explain: Not present
Well Label (inside)	Acceptable	Not Acceptable	Explain: Not present
J-Plug	Acceptable	Not Acceptable	Explain: Not present

## PURGE METHOD

Date: 06/03/20 Time: 1623 Method: low-flow  
Total Well Depth (ft) = 10.20  
Depth to Water (ft) = 3.15  
Water Column (ft) = 7.05  
1.1  
1 volume  
Comments:

## OBSERVATIONS

Odor: None Low High H<sub>2</sub>S Fuel Like Other:

Comments: Orangeish purge water

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) ±0.1 s.u.	DO (mg/L) ±10%	ORP (mV) ±10 mV	Specific Conductance (mS/cm) ±3%	Temp (°C) ±3%	Turbidity (NTU) ≤10 NTU	Depth to water (feet)
1028	0.1	280	7.55	1.84	-102	0.555	14.68	7.5	3.21
1033	0.3	280	7.10	0.81	-76.1	0.500	14.01	28.2	3.15
1038	0.7	280	7.12	0.57	-79.1	0.486	14.68	8.8	3.15
1043	1.1	280	7.22	0.51	-85.3	0.479	14.17	6.6	3.15
1048	1.5	280	7.27	0.45	-88.8	0.474	14.22	3.1	3.15

## SAMPLING

Date: 06/03/20 Time: 1655  
Sample ID: OMC-MW-5015 Method of Sample Collection: grab

Analytical Parameters: VOC, MNA, DBS Metals, PCBs  
Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID:

Q.C. Parameters:

Trash picked up? Yes Well locked? Yes  
SIGNED/SAMPLER: Matt Hulals



# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-501D Field Crew: Matt G. Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: Overcast, 75°F

## WELL CONDITION

Well Pad	Acceptable	Not Acceptable	Explain: <u>N/A</u>
Protective Casing	Acceptable	Not Acceptable	Explain:
Well Casing	Acceptable	Not Acceptable	Explain:
Locking Cap	Acceptable	Not Acceptable	Explain: <u>N/A</u>
Well Label (outside)	Acceptable	Not Acceptable	Explain: <u>Not present</u>
Well Label (inside)	Acceptable	Not Acceptable	Explain: <u>Not present</u>
J-Plug	Acceptable	Not Acceptable	Explain: <u>Not present</u>

## PURGE METHOD

Date: 06/03/20 Time: 1205 Method: low-flow  
 Total Well Depth (ft) = 3.23  
 Depth to Water (ft): = 2.95  
 Water Column (ft): = 28.28 4.5

Comments:

1 volume

## OBSERVATIONS

Odor: None Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
1207	0.1	300	7.65	2.58	-127.1	0.590	13.65	41.8	2.96
1212	0.5	300	7.56	0.97	-138	0.592	13.37	11.3	2.96
1217	1.0	300	7.58	0.52	-144.7	0.595	13.39	7.3	2.96
1222	1.4	300	7.57	0.36	-145.7	0.598	13.22	5.9	2.96
1227	1.9	300	7.57	0.28	-147.5	0.603	13.45	3.2	2.96
1232	2.5	300	7.56	0.26	-146.4	0.610	13.39	2.3	2.96
1237	3.0	300	7.55	0.23	-150	0.612	13.33	2.7	2.96

## SAMPLING

Date: 06/03/20 Time: 1245  
 Sample ID: OMC-MW-501D Method of Sample Collection: grab

Analytical Parameters: VOC, MRA, Diss Metals, PCBs

Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID:

Q.C. Parameters:

Trash picked up? Yes

Well locked? Yes

SIGNED/SAMPLER:

Matt G.

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-5135 Field Crew: Matt G. Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: Overcast, 76°F

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <u>Not present</u>
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain: <u>On J-plug</u>
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 06/01/20 Time: 1250 Method: low-flow  
 Total Well Depth (ft) = 6.90  
 Depth to Water (ft): = 1.72  
 Water Column (ft): = 5.18 0.8  
 Comments: 1 volume

## OBSERVATIONS

Odor: None Low, High, H<sub>2</sub>S, Fuel Like, Other:  
 Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) ± 0.1 s.u.	DO (mg/L) ± 10%	ORP (mV) ± 10 mV	Specific Conductance (mS/cm) ± 3%	Temp (°C) ± 3%	Turbidity (NTU) ≤ 10 NTU	Depth to water (feet)
1254	0.1	300	6.95	2.69	174.5	0.705	11.87	5.4	1.78
1259	0.4	300	7.10	2.05	154.2	0.660	11.80	3.6	1.79
1304	1.0	300	7.18	2.08	144.3	0.651	11.96	0.0	1.78
1309	1.5	300	7.19	2.32	138.9	0.642	11.86	0.0	1.78
1314	2.0	300	7.21	2.42	134.8	0.635	11.78	0.0	1.79
1319	2.5	300	7.24	2.50	131.3	0.631	11.82	0.0	1.78

## SAMPLING

Date: 06/01/20 Time: 1325  
 Sample ID: OMC-MW-5135 Method of Sample Collection: grab  
 Analytical Parameters: VOL, MNA, Diss. Metals  
 Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID:  
 Q.C. Parameters:

Trash picked up? Yes

Well locked? Yes

SIGNED/SAMPLER:

Matt Gerlach

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-513D Field Crew: Matt G. Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: Overcast, 76°F

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <u>Not present</u>
Well Label (inside)	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <u>Not present</u>
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 06/01/20 Time: 1352 Method: low-flow  
 Total Well Depth (ft) = 23.25  
 Depth to Water (ft): = 1.72  
 Water Column (ft): = 21.53 34  
 Comments: 1 volume

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:  
 Comments: Orange purge water at first

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) ± 0.1 s.u.	DO (mg/L) ± 10%	ORP (mV) ± 10 mV	Specific Conductance (mS/cm) ± 3%	Temp (°C) ± 3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
1358	0.1	160	7.43	1.44	-44.2	1.125	12.85	19.2	1.85
1403	0.3	300	7.37	0.82	-31.7	1.100	12.30	0.0	1.90
1408	0.6	300	7.34	0.66	-37.6	1.107	12.14	0.0	1.90
1413	1.1	300	7.32	0.47	-55.4	1.150	11.96	0.0	1.90
1418	1.7	300	7.32	0.46	-72.9	1.168	11.74	0.0	1.90
1423	2.2	300	7.32	0.34	-70	1.174	11.79	0.0	1.90
1428	2.5	300	7.32	0.30	-84.4	1.177	11.70	0.0	1.90
1433	2.7	300	7.33	0.33	-85.3	1.178	11.82	0.0	1.90
1438	3.0	300	7.33	0.33	-84.1	1.181	11.90	0.0	1.90

## SAMPLING

Date: 06/01/20 Time: 1440  
 Sample ID: OMC-MW-513D Method of Sample Collection: grab  
 Analytical Parameters: VOL, MVA, Diss. Metals  
 Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID:  
 Q.C. Parameters:

Trash picked up? Yes Well locked? Yes  
 SIGNED/SAMPLER: Matt G.

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-5165 Field Crew: J. Graham Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: 75°F Sunny Windy

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <u>discontinued</u>
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/2/20 Time: 0950 Method: low-flow  
 Total Well Depth (ft) = 8.22  
 Depth to Water (ft): = 0.97  
 Water Column (ft): = 7.25 1.2  
 Comments: 1 volume

## OBSERVATIONS

Odor: None Low High H<sub>2</sub>S Fuel Like Other:  
 Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
<u>0955</u>	<u>START PURGE</u>								
<u>1000</u>		<u>350</u>	<u>7.07</u>	<u>1.27</u>	<u>31.4</u>	<u>0.842</u>	<u>17.72</u>	<u>4.3</u>	<u>1.00</u>
<u>1005</u>		<u>380</u>	<u>6.92</u>	<u>0.84</u>	<u>27.9</u>	<u>0.852</u>	<u>18.26</u>	<u>0.7</u>	<u>1.00</u>
<u>1010</u>		<u>350</u>	<u>6.90</u>	<u>0.64</u>	<u>28.3</u>	<u>0.869</u>	<u>18.32</u>	<u>0.1</u>	<u>1.00</u>
<u>1015</u>		<u>350</u>	<u>6.89</u>	<u>0.59</u>	<u>27.7</u>	<u>0.874</u>	<u>18.36</u>	<u>0.3</u>	<u>1.00</u>
<u>1020</u>		<u>350</u>	<u>6.89</u>	<u>0.53</u>	<u>26.0</u>	<u>0.879</u>	<u>18.33</u>	<u>1.7</u>	<u>1.00</u>
<u>1025</u>		<u>350</u>	<u>6.89</u>	<u>0.49</u>	<u>23.6</u>	<u>0.879</u>	<u>18.40</u>	<u>0.5</u>	<u>1.00</u>
<u>1030</u>	<u>SAMPLE</u>								

## SAMPLING

Date: 6/2/20 Time: 1030  
 Sample ID: PMC-MW-5165 Method of Sample Collection: grab  
 Analytical Parameters: VOCs, TOC, ALK, Anions, Diss Metals, MEE, Sulfid  
 Q.C. Sample Type: N/A MS/MSD Duplicate Duplicate Sample ID: N/A  
 Q.C. Parameters: N/A  
 Trash picked up? Y Well locked? Y  
 SIGNED/SAMPLER: [Signature]

## Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-516D Field Crew: S. Groh Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: 70°F Sunny, Windy

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <u>non-existent</u>
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/2/20 Time: 0754 Method: low-flow  
 Total Well Depth (ft): = 25.32  
 Depth to Water (ft): = 1.04  
 Water Column (ft): = 24.28 3.9  
 Comments: 1 volume

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
0800	Start	Purge							
0805	0.4	310	7.57	1.02	-50.0	8.085	13.91	33.8	1.12
0810	0.8	300	7.50	0.64	-95.7	8.695	18.60	12.7	1.12
0815	1.2	300	7.50	0.54	-105.5	8.858	13.65	25.6	1.13
0820	1.6	300	7.50	0.49	-110.5	8.910	13.68	31.9	1.12
0825	2.0	300	7.50	0.46	-115.7	8.947	13.66	90.6	1.13
0830	2.4	300	7.50	0.44	-119.9	8.960	13.68	83.9	1.13
0835	2.8	300	7.50	0.42	-123.9	8.896	13.76	47.2	1.12
0840	3.2	300	7.50	0.41	-125.2	9.387	13.67	13.0	1.10
0845	3.6	300	7.50	0.40	-127.6	8.968	13.73	47.9	1.09
0850	4.0	300	7.50	0.39	-129.7	8.918	13.66	53.7	1.08
0855	4.4	300	7.50	0.39	-131.3	8.997	13.61	50.2	1.07

## SAMPLING

Date: 6/2/20 Time: 0905  
 Sample ID: OMC-MW-516D Method of Sample Collection: grab  
 Analytical Parameters: VOCs, TOC, Diss Metals, Alk, Anions MEE, Sulfide  
 Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID: OMC-MW-516D

Q.C. Parameters: Samc as Parent

Trash picked up? ☒

Well locked? ☒

SIGNED/SAMPLER: [Signature]

## Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-576D

**Field Crew:**

**Purpose of Sampling:**

### OMC Quarterly Sampling

Site: OMC

### Field Conditions

SEE PG 1

## WELL CONDITION

Well Pad	Acceptable	Not Acceptable	Explain:
Protective Casing	Acceptable	Not Acceptable	Explain:
Well Casing	Acceptable	Not Acceptable	Explain:
Locking Cap	Acceptable	Not Acceptable	Explain:
Well Label (outside)	Acceptable	Not Acceptable	Explain:
Well Label (inside)	Acceptable	Not Acceptable	Explain:
J-Plug	Acceptable	Not Acceptable	Explain:

See PG 1

## PURGE METHOD

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Method: low-flow

Total Well Depth (ft) =

Depth to Water (ft): =

Water Column (ft): =

**Comments:**

1 volume

See pg 1

## OBSERVATIONS

Odor:           None   ,   Low   ,   High   ,   H<sub>2</sub>S   ,   Fuel Like   ,   Other:

## Comments

See pg 1

## FIELD PARAMETERS

[illegible]

## SAMPLING

Date:

Time:

**Sample ID:**

Method of Sample Collection: grab

### Analytical Parameters:

**Q.C. Sample Type:**

MS/MSD

**Duplicate**

Duplicate Sample ID:

### Q.C. Parameters:

### Trash picked up?

Well locked?

**SIGNED/SAMPLER**

Well looked?

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-5285

Field Crew: Matt G.

Purpose of Sampling:

OMC Quarterly Sampling

Site: OMC

Field Conditions: Sunny, 76°F

## WELL CONDITION

Well Pad	Acceptable	Not Acceptable	Explain:
Protective Casing	Acceptable	Not Acceptable	Explain:
Well Casing	Acceptable	Not Acceptable	Explain:
Locking Cap	Acceptable	Not Acceptable	Explain:
Well Label (outside)	Acceptable	Not Acceptable	Explain: Not present
Well Label (inside)	Acceptable	Not Acceptable	Explain: Not present
J-Plug	Acceptable	Not Acceptable	Explain:

## PURGE METHOD

Date: 06/01/20 Time: 1506 Method: low-flow

Total Well Depth (ft) = 5.42

Depth to Water (ft): = 2.33

Water Column (ft): = 2.09

0.3

1 volume

Comments:

## OBSERVATIONS

Odor: None Low High H<sub>2</sub>S Fuel Like Other:

Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) ±0.1 s.u.	DO (mg/L) ±10%	ORP (mV) ±10 mV	Specific Conductance (mS/cm) ±3%	Temp (°C) ±3%	Turbidity (NTU) ≤10 NTU	Depth to water (feet)
1510	0.1	320	7.85	7.87	69.3	6.558	15.28	6.1	3.36
1515	0.4	380	7.64	7.57	81.9	6.546	14.87	0.8	3.36
1520	0.9	320	7.64	7.79	89.4	6.544	14.81	0.7	3.35
1525	1.3	320	7.66	8.02	96.2	6.542	14.73	0.5	3.35
1530	1.7	320	7.68	8.17	101.7	6.542	14.64	0.7	3.35

## SAMPLING

Date: 06/01/20

Time: 1535

Sample ID: OMC-MW-5285

Method of Sample Collection: grab

Analytical Parameters: VOL, MNA, Diss. Metals

Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID:

Q.C. Parameters:

Trash picked up? Yes

Well locked? Yes

SIGNED/SAMPLER:

Matt Gulanski

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-528D Field Crew: Matt G. Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: Sunny, 79°F

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	Acceptable	<u>Not Acceptable</u>	Explain: <u>Not present</u>
Well Label (inside)	Acceptable	<u>Not Acceptable</u>	Explain: <u>Not present</u>
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 06/02/20 Time: 1004 Method: Low-flow  
 Total Well Depth (ft) = 27.00  
 Depth to Water (ft): = 3.13  
 Water Column (ft): = 23.87 3.8  
 Comments: 1 volume

## OBSERVATIONS

Odor: None Low, High, H<sub>2</sub>S, Fuel Like, Other:  
 Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.)	DO (mg/L)	ORP (mV)	Specific Conductance (mS/cm)	Temp (°C)	Turbidity (NTU)	Depth to water (feet)
	--	--	+/- 0.1 s.u.	+/- 10%	+/- 10 mV	+/- 3%	+/- 3%	<10 NTU	--
1008	0.1	320	7.05	9.04	161.45	1.255	14.81	8.9	3.21
1013	0.5	320	7.09	10.17	153.4	1.241	13.63	8.4	3.22
1018	0.9	320	7.10	10.48	161.6	1.239	13.54	2.1	3.21
1023	1.3	320	7.08	9.15	167.2	1.250	13.58	0.7	3.22
1028	1.6	320	7.07	9.53	168.2	1.248	13.57	0.2	3.23
1033	2.4	320	7.06	9.53	170.4	1.249	13.34	0.0	3.23

## SAMPLING

Date: 06/02/20 Time: 1040  
 Sample ID: OMC-MW-528D Method of Sample Collection: Grab  
 Analytical Parameters: VOC, MNA, DSS, Metals  
 Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID:  
 Q.C. Parameters:

Trash picked up? Yes Well locked? Yes  
 SIGNED/SAMPLER: Matt Gulach



# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: **MW 6005**

Field Crew: **L. Scharen**

Purpose of Sampling:

OMC Quarterly Sampling

Site: **OMC**

Field Conditions: **Partly sunny 67°F**

## WELL CONDITION

Well Pad	Acceptable	Not Acceptable	Explain: <b>ground cover = well pad</b>
Protective Casing	Acceptable	Not Acceptable	Explain:
Well Casing	Acceptable	Not Acceptable	Explain:
Locking Cap	Acceptable	Not Acceptable	Explain: <b>Cap is Good, but no lock</b>
Well Label (outside)	Acceptable	Not Acceptable	Explain: <b>No outside label</b>
Well Label (inside)	Acceptable	Not Acceptable	Explain:
J-Plug	Acceptable	Not Acceptable	Explain:

**\*Wasps in well cap**

## PURGE METHOD

Date: **6/11/2020** Time: **14:00** Method: **low-flow**

Total Well Depth (ft) = **10.56**

Depth to Water (ft) = **3.34**

Water Column (ft) = **7.22**

**11.6**

Comments:

1 volume

## OBSERVATIONS

Odor: **None**, Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments: **light brown water with light brown flecks of material.**

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
14:12		240	6.95	0.69	-89.8	0.695	13.20	2.9	3.45
14:17		240	6.71	0.28	-85.4	0.674	13.26	1.2	3.45
14:22		240	6.63	0.18	-84.3	0.676	13.11	1.1	3.45
14:27		240	6.58	0.12	-83.9	0.676	13.12	1.5	3.45
14:32		240	6.57	0.09	-84.2	0.675	13.49	1.9	3.45
14:37		240	6.55	0.09	-83.8	0.673	13.47	1.9	3.45
14:42		240	6.54	0.08	-83.9	0.675	13.25	1.9	3.45
14:50	<b>SAMPLED</b>								
	4.5								

## SAMPLING

Date: **6/11/2020**

Time: **14:50**

Sample ID: **OMC MW - 6005**

Method of Sample Collection: **grab**

Analytical Parameters: **VOCs, Metals, MNA**

Q.C. Sample Type: **N/A** MS/MSD: Duplicate Duplicate Sample ID:

Q.C. Parameters: **N/A**

Trash picked up? **Y**

Well locked? **Y**

SIGNED/SAMPLER:

**Lori Schorch**

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: 600D

Field Crew: L. SCHARCH

Purpose of Sampling:

OMC Quarterly Sampling

Site: OMC

Field Conditions: CLOUDY 65°F

## WELL CONDITION

Well Pad	Acceptable	Not Acceptable	Explain: Well pad is ground cover
Protective Casing	Acceptable	Not Acceptable	Explain:
Well Casing	Acceptable	Not Acceptable	Explain:
Locking Cap	Acceptable	Not Acceptable	Explain:
Well Label (outside)	Acceptable	Not Acceptable	Explain: No outside label
Well Label (inside)	Acceptable	Not Acceptable	Explain:
J-Plug	Acceptable	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/11/2020 Time: 12:25 Method: low-flow

Total Well Depth (ft) = 25.15

Depth to Water (ft) = 3.31

Water Column (ft) = 21.84

3.5

Comments:

1 volume

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments: Light brown water with floating brown particles. Turbidity between 13:07 & 13:12 reduced on its own. Foam in purge water bucket.

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10% WS	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
12:37		240	6.99	0.6	89.9	1.908	12.73	28.8	3.45
12:42		240	6.88	0.4	55.2	1.891	12.41	26.3	3.79
12:47		120	6.85	0.22	29.2	1.870	12.59	39.1	3.74
12:52		280	6.94	0.14	-12.9	1.872	12.13	46.5	3.76
12:57		280	6.73	0.08	-49.9	1.878	11.92	55.3	3.86
13:02		280	6.67	0.06	-74.0	1.902	11.96	19.5	3.86
13:07		240	6.59	0.05	-95.6	1.960	12.22	120.0	3.84
13:12		240	6.54	0.05	-101.8	2.012	12.31	28.8	3.86
13:17		240	6.51	0.05	-104.2	2.045	12.16	48.0	3.86
13:22		240	6.50	0.04	-106.5	2.080	12.15	41.1	3.86
13:27	4.5	240	6.50	0.04	-105.9	2.062	12.49	41.2	3.86
13:35	SAMPLED								

## SAMPLING

Date: 6/11/2020

Time: 13:35

Sample ID: OMC-MW-600D

Method of Sample Collection: grab

Analytical Parameters: VOCs, Metals, MNA

Q.C. Sample Type: N/A MS/MSD Duplicate Duplicate Sample ID:

Q.C. Parameters: N/A

Trash picked up? Y

Well locked? Y

SIGNED/SAMPLER:

*L. Scharch*

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-6015 Field Crew: W. Kite Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: 700 F, Sunny, humid

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	<u>Acceptable</u>	Not Acceptable	Explain: <u>can't find</u>
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/4/20 Time: 0815 Method: low-flow  
 Total Well Depth (ft): = 10.69  
 Depth to Water (ft): = 3.49  
 Water Column (ft): = 7.2 11.5  
 1 volume

Comments:

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
0820	0.5	400	7.09	0.64	-193.3	0.629	12.72	14.1	3.56
0825	1.0	400	7.08	0.49	-201.2	0.627	12.71	17.6	3.56
0830	1.5	400	7.11	0.41	-205.1	0.621	12.60		3.56
0835	2.0	400	7.13	0.35	-206.9	0.614	12.63		3.56
0840	2.5	400	7.14	0.33	-207.0	0.611	12.65		3.56
0845	3.0	400	7.13	0.32	-208.7	0.610	12.71		3.56
0850	3.5	400	7.13	0.32	-208.6	0.610	12.73		3.56
								Condensation on vial in Hach turbidimeter prevents accurate read	

## SAMPLING

Date: 6/4/20 Time: 0855  
 Sample ID: OMC-6015 - MW-6015 Method of Sample Collection: grab  
 Analytical Parameters: VOCs, metals, MNA  
 Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID: OMC - MW-6015

Q.C. Parameters:

Trash picked up? y

Well locked? y

SIGNED/SAMPLER: [Signature]

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-601D Field Crew: W. Kite Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: 70s F. Sunny, breezy

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <u>could not find</u>
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/3/20 Time: 0925 Method: low-flow  
 Total Well Depth (ft): = 24.96  
 Depth to Water (ft): = 3.40  
 Water Column (ft): = 21.56 3.4  
 1 volume  
 Comments:

## OBSERVATIONS

Odor: None Low High H<sub>2</sub>S Fuel Like Other:  
 Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
0930	0.5	400	6.38	0.76	-141.0	2.312	11.88	55.3	3.97
0935	1.0	400	6.37	0.49	-140.5	2.355	11.95	45.2	3.57
0940	1.5	400	6.34	0.44	-140.0	2.353	11.98	31.4	3.57
0945	2.0	400	6.37	0.36	-137.6	2.350	12.09	52.1	3.57
0950	2.5	400	6.38	0.35	-135.3	2.349	11.98	50.7	3.57
0955	3.0	400	6.37	0.33	-128.8	2.339	12.11	33.6	3.57
1000	3.5	400	6.10	0.55	-80.9	2.503	12.64	5.0	3.57
1005	4.0	400	6.11	0.51	-82.3	2.506	12.64	5.3	3.57
1010	4.5	400	6.11	0.46	-82.7	2.507	12.80	7.4	3.57
1015	5.0	400	6.11	0.46	-83.1	2.503	12.75	8.8	3.57

## SAMPLING

Date: 6/3/20 Time: 1020  
 Sample ID: OMC-MW-601D Method of Sample Collection: grab

Analytical Parameters: VOCs, Metals, MNA

Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID:

Q.C. Parameters:

Trash picked up? Y Well locked? Y

SIGNED/SAMPLER: [Signature]

Switch for  
YSI  
R12832  
015449

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW - 6025 Field Crew: Matt Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: Sunny, 84°F

## WELL CONDITION

Well Pad	Acceptable	Not Acceptable	Explain: <u>Not present N/A</u>
Protective Casing	Acceptable	Not Acceptable	Explain:
Well Casing	Acceptable	Not Acceptable	Explain:
Locking Cap	Acceptable	Not Acceptable	Explain: <u>N/A</u>
Well Label (outside)	Acceptable	Not Acceptable	Explain: <u>Not present</u>
Well Label (inside)	Acceptable	Not Acceptable	Explain:
J-Plug	Acceptable	Not Acceptable	Explain:

## PURGE METHOD

Date: 060220 Time: 1259 Method: Low-Flow  
 Total Well Depth (ft) = 9.22  
 Depth to Water (ft): = 2.92  
 Water Column (ft): = 6.3 1.0  
 Comments: 1 volume

## OBSERVATIONS

Odor: None Low, High, H<sub>2</sub>S, Fuel Like, Other:  
 Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) ±0.1 s.u.	DO (mg/L) ±10%	ORP (mV) ±10 mV = 127	Specific Conductance (mS/cm) ±3%	Temp (°C) ±3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
1502	0.1	280	7.37	2.43	<del>0.666</del>	0.666	15.05	4.4	2.91
1507	0.4	280	7.26	0.21	-130	0.631	14.78	0.6	2.95
1512	1.0	280	7.24	0.37	-130.5	0.615	14.46	0.0	2.95
1517	1.4	280	7.16	0.26	-129.9	0.613	14.57	0.8	2.95
1522	1.9	280	7.13	0.23	-129	0.609	14.32	0.8	2.94
1527	2.4	280	7.09	0.22	-127.1	0.612	14.30	0.8	2.94

## SAMPLING

Date: 060220 Time: 1535  
 Sample ID: OMC-MW-6025 Method of Sample Collection: Grab

Analytical Parameters: UOC, MVA, DSS Metals

Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID:

Q.C. Parameters:

Trash picked up? Yes

Well locked? Yes

SIGNED/SAMPLER:

Matt Ardash

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-602D Field Crew: Matt G. Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: Overcast, 67°F

## WELL CONDITION

Well Pad	Acceptable	<u>Not Acceptable</u>	Explain: <u>N/A</u>
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	Acceptable	<u>Not Acceptable</u>	Explain: <u>N/A</u>
Well Label (outside)	Acceptable	<u>Not Acceptable</u>	Explain: <u>Not present</u>
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 06/03/20 Time: 0833 Method: low-flow  
 Total Well Depth (ft) = 25.92  
 Depth to Water (ft): = 2.95  
 Water Column (ft): = 22.97 3.7  
 1 volume

Comments:

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments: water is blackish while purging

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) ≤10 NTU	Depth to water (feet)
0837	0.1	300	7.30	1.48	-90.8	3.987	13.21	62.3	3.03
0842	0.4	300	7.54	0.50	-144.3	3.423	12.63	4.1	3.04
0847	0.9	300	7.54	0.40	-155.2	3.048	12.40	1.3	3.04
0852	1.2	300	7.70	0.33	-164.1	2.985	12.37	0.6	3.04
0857	1.7	300	7.74	0.26	-171.2	2.929	12.49	0.6	3.04
0902	2.2	300	7.75	0.23	-174.5	2.893	12.39	0.3	3.04
0907	2.6	300	7.75	0.21	-177.1	2.870	12.39	0.4	3.04

## SAMPLING

Date: 06/03/20 Time: 0910, 0915

Sample ID: OMW-MW-602D, OMC-MW-602D-R Method of Sample Collection: grab

Analytical Parameters: VCE, MNA, Diff. Metals

Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID: OMW-MW-602D-R

Q.C. Parameters:

Trash picked up? Yes

Well locked? Yes

SIGNED/SAMPLER:

Matt Gendall

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: 60 MW-603S Field Crew: W. Kite Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: overcast 60s F, breezy

## WELL CONDITION

Well Pad	Acceptable	Not Acceptable	Explain: <u>under water</u>
Protective Casing	Acceptable	Not Acceptable	Explain:
Well Casing	Acceptable	Not Acceptable	Explain:
Locking Cap	Acceptable	Not Acceptable	Explain:
Well Label (outside)	Acceptable	Not Acceptable	Explain: <u>not visible</u>
Well Label (inside)	Acceptable	Not Acceptable	Explain:
J-Plug	Acceptable	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/1/20 Time: 1125 Method: low-flow  
 Total Well Depth (ft) = 10198  
 Depth to Water (ft): = 3.01  
 Water Column (ft): = 7.97 1.3  
 Comments: 1 volume

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:  
 Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
1125	Begin	purging							
1130	0.66	500	7.18	0.70	-47.8	0.547	13.21	4.1	3.00
1135	1.33	500	7.22	0.53	-60.9	0.565	13.16	2.3	3.00
1140	2.00	500	7.22	0.46	-62.4	0.571	13.19	2.5	3.00
1145	2.66	500	7.23	0.43	-63.8	0.575	13.16	1.7	3.00
1150	3.33	500	7.21	0.41	-67.6	0.575	13.17	4.1	3.00

## SAMPLING

Date: 6/1/20 Time: 1155  
 Sample ID: OMC-MW-603S Method of Sample Collection: grab  
 Analytical Parameters: VOCS, metals, MNA  
 Q.C. Sample Type: MS/MSD Duplicate   Duplicate Sample ID:    
 Q.C. Parameters:    
 Trash picked up? ☒ Well locked? no lock  
 SIGNED/SAMPLER: W. Kite

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-603D

Field Crew: W. Kite

Purpose of Sampling:

OMC Quarterly Sampling

Site: OMC

Field Conditions: 70°F, breezy, overcast

## WELL CONDITION

Well Pad	Acceptable	Not Acceptable	Explain:
Protective Casing	Acceptable	Not Acceptable	Explain: under water
Well Casing	Acceptable	Not Acceptable	Explain:
Locking Cap	Acceptable	Not Acceptable	Explain:
Well Label (outside)	Acceptable	Not Acceptable	Explain: not vis. ble
Well Label (inside)	Acceptable	Not Acceptable	Explain:
J-Plug	Acceptable	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/1/20 Time: 1220 Method: low-flow

Total Well Depth (ft) = 26.52

Depth to Water (ft): = 2.52

Water Column (ft): = 24.0

3.8

Comments:

1 volume

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
1220	Begin	pumping							
1225	0.66	500	6.38	1.11	-22.5	3.086	11.40	10.3	7.40
1230	1.33	500	6.40	0.42	-24.7	3.469	11.41	18.1	7.76
1235	2.00	400	6.39	0.32	-23.7	3.928	11.67	5.8	7.90
1240	2.54	400	6.40	0.32	-22.8	3.989	11.68	0.9	7.65
1245	3.00	400	6.41	0.33	-22.2	3.997	11.61	8.4	7.12

## SAMPLING

Date: 6/1/20

Time: 1250

Sample ID: OMC-mw-603D

Method of Sample Collection: grab

Analytical Parameters: VOCs, metals, MNA

Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID:

Q.C. Parameters:

Trash picked up? y

Well locked? ☒

SIGNED/SAMPLER:

W. Kite



# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: **MW604S** Field Crew: **L. Scharch** Purpose of Sampling: **OMC Quarterly Sampling**  
 Site: **OMC** Field Conditions: **Sunny 82°F**

## WELL CONDITION

Well Pad	Acceptable	Not Acceptable	Explain: <b>covered in water</b>
Protective Casing	Acceptable	Not Acceptable	Explain:
Well Casing	Acceptable	Not Acceptable	Explain:
Locking Cap	Acceptable	Not Acceptable	Explain:
Well Label (outside)	Acceptable	Not Acceptable	Explain: <b>no label outside</b>
Well Label (inside)	Acceptable	Not Acceptable	Explain:
J-Plug	Acceptable	Not Acceptable	Explain:

## PURGE METHOD

Date: **6/21/2020** Time: **11:40** Method: **low-flow**  
 Total Well Depth (ft) = **10.64**  
 Depth to Water (ft): = **2.42**  
 Water Column (ft): = **8.22** **1.3**  
 Comments: **1 volume**

## OBSERVATIONS

Odor: **None** Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments: **brown water**

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.)	DO (mg/L)	ORP (mV)	Specific Conductance (mS/cm)	Temp (°C)	Turbidity (NTU)	Depth to water (feet)
	--	--	+/- 0.1 s.u.	+/- 10%	+/- 10 mV	+/- 3%	+/- 3%	<10 NTU	--
11:22		200	6.68	0.92	-130.9	1.049	17.31	1.8	2.49
11:27		200	6.29	0.34	-122.4	1.051	18.16	0.0	2.49
11:32		200	6.21	0.24	-119.3	1.051	18.13	0.0	2.49
11:37		200	6.09	0.18	-119.0	1.046	18.35	0.8	2.49
11:42		200	6.05	0.16	-120.2	1.049	18.26	1.3	2.49
11:47		200	6.03	0.13	-122.6	1.046	18.33	1.8	2.49
11:52		200	6.02	0.12	-123.8	1.045	18.15	2.5	2.49
11:57		200	6.00	0.12	-125.1	1.040	18.30	1.3	2.49
12:05	↓ SAMPLED								
	~3.5								

## SAMPLING

Date: **6/21/2020** Time: **12:05**  
 Sample ID: **OMC-MW-604S** Method of Sample Collection: **grab**

Analytical Parameters: **VOCs, Metals, MNA**

Q.C. Sample Type: **N/A** MS/MSD Duplicate Duplicate Sample ID:

Q.C. Parameters: **N/A**

Trash picked up? **y** Well locked? **y**  
 SIGNED/SAMPLER: **L. Scharch**

## Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: **MW604D** Field Crew: **L. Scharch** Purpose of Sampling: **OMC Quarterly Sampling**  
 Site: **OMC** Field Conditions: **Sunny 84°F**

## WELL CONDITION

Well Pad	Acceptable	Not Acceptable	Explain: <b>Water surrounding well</b>
Protective Casing	Acceptable	Not Acceptable	Explain:
Well Casing	Acceptable	Not Acceptable	Explain:
Locking Cap	Acceptable	Not Acceptable	Explain:
Well Label (outside)	Acceptable	Not Acceptable	Explain: <b>No outside label</b>
Well Label (inside)	Acceptable	Not Acceptable	Explain:
J-Plug	Acceptable	Not Acceptable	Explain:

## PURGE METHOD

Date: Time: **12:30** Method: **low-flow**  
 Total Well Depth (ft) = **30.01**  
 Depth to Water (ft): = **4.16**  
 Water Column (ft): = **25.85** **4.1**  
 Comments: 1 volume

## OBSERVATIONS

Odor: None, **Low**, High, H<sub>2</sub>S, Fuel Like, Other:

Comments: **brown foamy water with a lot of air bubbles**

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) +/- 10 NTU	Depth to water (feet)
12:42		200	6.01	0.35	-110.0	3.802	16.47	19.0	4.21
12:47		240	6.04	0.40	-111.1	3.712	16.51	22.3	4.21
12:52		240	6.07	0.49	-110.4	3.600	16.53	24.0	4.21
12:57		240	6.13	0.61	-107.9	3.569	16.83	14.9	4.21
13:02		240	6.15	0.71	-107.3	3.557	16.95	12.6	4.21
13:07		220	6.20	1.02	-106.7	3.541	17.31	8.1	4.22
13:12		220	6.25	1.28	-107.1	3.537	17.57	9.1	4.22
13:17		180	6.27	1.46	-107.1	3.533	17.70	9.6	4.22
13:22		180	6.35	1.83	-111.3	3.529	17.75	36.0	4.22
13:27		200	6.42	2.01	-118.6	3.494	17.85	98.7	4.22
13:32		200	6.51	2.50	-121.8	3.479	18.11	112.5	4.22
13:37		200	6.54	3.46	-120.8	<del>3.482</del> 3.482	18.16	123.5	4.22

## SAMPLING

Date: **6/2/2020** Time: **14:15**  
 Sample ID: **OMC-MW-604D** Method of Sample Collection: **grab**  
 Analytical Parameters: **VOCs, Metals, MNA**  
 Q.C. Sample Type: **N/A** MS/MSD Duplicate Duplicate Sample ID:  
 Q.C. Parameters: **N/A**

Trash picked up? **Y**Well locked? **Y**

SIGNED/SAMPLER:

*L. Scharch*

## Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW604D Field Crew: L. Scharch Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: Sunny 90°F

## WELL CONDITION

	Acceptable	Not Acceptable	Explain:
Well Pad			
Protective Casing			
Well Casing			
Locking Cap			
Well Label (outside)			
Well Label (inside)			
J-Plug			

SEE PG. 1

## PURGE METHOD

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Method: low-flow  
 Total Well Depth (ft): =  
 Depth to Water (ft): =  
 Water Column (ft): =  
 Comments: \_\_\_\_\_ 1 volume

SEE PG. 1

## OBSERVATIONS

Odor: None , Low , High , H<sub>2</sub>S , Fuel Like , Other:

Comments: \_\_\_\_\_

SEE PG. 1

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) ≤10 NTU	Depth to water (feet)
13:42	1	200	6.55	4.28	-119.4	3.490	18.05	131.2	4.22
13:47		200	6.56	4.08	-118.5	3.501	18.14	125.1	4.22
13:52		200	6.57	5.44	-117.3	3.485	18.23	130.1	4.22
13:57		200	6.58	5.80	-116.3	3.494	18.37	132.0	4.22
14:02		200	6.60	6.07	-115.6	3.497	18.62	140.0	4.22
14:07		200	6.60	6.33	-114.6	3.514	18.82	141.0	4.22
14:15	↓	SAMPLED							
	8 GAL								

## SAMPLING

Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Sample ID: \_\_\_\_\_ Method of Sample Collection: grab

SEE PG. 1

Analytical Parameters:

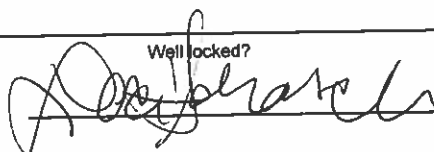
Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID: \_\_\_\_\_

Q.C. Parameters:

Trash picked up? \_\_\_\_\_

Well locked? \_\_\_\_\_

SIGNED/SAMPLER: \_\_\_\_\_



# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-6055 Field Crew: W. Kin Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: Sunny, 80°F, breezy

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/2/20 Time: 1040 Method: low-flow  
 Total Well Depth (ft) = 10.70  
 Depth to Water (ft): = 4.26  
 Water Column (ft): = 6.44 1.0  
 Comments: 1 volume

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:  
 Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) <10 NTU	Depth to water (feet) --
1045		700	6.96	0.51	-50.3	0.511	14.46	0	4.32
1050			6.96	0.49	-51.8	0.511	14.49	0	4.32
1055			6.95	0.43	-54.9	0.518	14.63	0	4.32
1100			6.85	0.37	-62.7	0.529	14.61	0	4.32
1105			6.89	0.36	-59.0	0.535	14.48	0	4.32

## SAMPLING

Date: 6/2/20 Time: 1110  
 Sample ID: MW-6055 Method of Sample Collection: grab  
 Analytical Parameters: VOCs, metals, MnA  
 Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID:

Q.C. Parameters:

Trash picked up? X Well locked? ✓

SIGNED/SAMPLER:

W. Kin

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: mw-605D Field Crew: W. Kirk Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: Sunny, 70°F, breezy

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/2/20 Time: 0903 Method: low-flow  
 Total Well Depth (ft) = 27.20  
 Depth to Water (ft): = 4.20  
 Water Column (ft): = 23.0 3.7  
 Comments: 1 volume

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:  
 Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
<u>0903</u>	<u>begin</u>	<u>pumping</u>							
<u>0908</u>	<u>0.8</u>	<u>600</u>	<u>6.57</u>	<u>0.53</u>	<u>-33.1</u>	<u>2.727</u>	<u>11.66</u>	<u>0</u>	<u>4.70</u>
<u>0913</u>	<u>1.6</u>	<u>600</u>	<u>6.71</u>	<u>0.42</u>	<u>-117.5</u>	<u>2.762</u>	<u>11.63</u>	<u>0</u>	<u>4.70</u>
<u>0918</u>		<u>500</u>	<u>6.84</u>	<u>0.36</u>	<u>-123.8</u>	<u>2.229</u>	<u>12.31</u>	<u>0</u>	<u>4.62</u>
<u>0923</u>		<u>500</u>	<u>6.74</u>	<u>0.34</u>	<u>-99.8</u>	<u>2.183</u>	<u>12.37</u>	<u>0</u>	<u>4.65</u>
<u>0928</u>		<u>500</u>	<u>6.69</u>	<u>0.32</u>	<u>-88.6</u>	<u>2.259</u>	<u>12.38</u>	<u>0</u>	<u>4.65</u>
<u>0933</u>		<u>500</u>	<u>6.64</u>	<u>0.31</u>	<u>-83.5</u>	<u>2.193</u>	<u>12.40</u>	<u>0</u>	<u>4.65</u>
<u>0938</u>		<u>500</u>	<u>6.61</u>	<u>0.30</u>	<u>-79.3</u>	<u>2.178</u>	<u>12.48</u>	<u>0</u>	<u>4.65</u>
<u>0943</u>		<u>500</u>	<u>6.56</u>	<u>0.29</u>	<u>-72.0</u>	<u>2.164</u>	<u>12.46</u>	<u>0</u>	<u>4.65</u>
<u>0945</u>	<u>collect</u>	<u>sample</u>							

## SAMPLING

Date: 6/2/20 Time: 0945  
 Sample ID: OMC-mw-605D Method of Sample Collection: grab

Analytical Parameters:

Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID: OMC-mw-605D-R  
0950

Q.C. Parameters:

Trash picked up? Y Well locked? Y  
 SIGNED/SAMPLER: W. Kirk

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW6065 Field Crew: L. Scharch Purpose of Sampling: Q1, Q2 Quarterly Sampling  
 Site: OMC Field Conditions: 69°F, Partly Cloudy

## WELL CONDITION

Well Pad	Acceptable	Not Acceptable	Explain: <u>Concrete pad is deteriorating and there is a hole ~ 1 foot deep under the well pad</u>
Protective Casing	Acceptable	Not Acceptable	Explain:
Well Casing	Acceptable	Not Acceptable	Explain:
Locking Cap	Acceptable	Not Acceptable	Explain:
Well Label (outside)	Acceptable	Not Acceptable	Explain: <u>no label on outside</u>
Well Label (inside)	Acceptable	Not Acceptable	Explain:
J-Plug	Acceptable	Not Acceptable	Explain:

\* Wasps sprayed @ 7:55

## PURGE METHOD

Date: 6/14/2020 Time: 7:50 Method: low-flow  
 Total Well Depth (ft) = 9.78  
 Depth to Water (ft): = 4.13  
 Water Column (ft): = 5.65 0.9  
 Comments: 1 volume

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments: clear purge water with black flecks of material

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) ±0.1 s.u.	DO (mg/L) ±10%	ORP (mV) ±10 mV	Specific Conductance (mS/cm) ±3%	Temp (°C) ±3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
8:10		360	7.39	3.08	-49.0	6.711	15.17	37.6	4.81
8:15		360	7.47	1.04	-130.8	0.663	14.23	18.0	4.81
8:20		360	7.67	0.73	-43.0	0.651	14.29	8.4	4.81
8:25		360	7.78	0.65	-55.4	0.515	14.32	8.3	4.81
8:30		360	7.84	0.56	-105.0	0.642	14.33	1.2	4.81
8:35		360	7.86	0.60	-108.1	0.642	14.30	2.1	4.81
8:40		360	7.86	0.63	-79.7	0.643	14.33	14.1	4.81
8:45		360	7.88	0.52	-21.7	0.642	14.34	14.4	4.81
8:50		360	7.89	0.48	-46.8	0.637	14.71	12.9	4.81
8:55		360	7.89	0.45	-61.9	0.637	14.51	13.0	4.81
9:00		360	7.89	0.44	-54.8	0.635	14.55	6.4	4.81
9:05	7.5	360	7.90	0.44	-55.3	0.636	14.51	9.9	4.81

9:10 SAMPLED

## SAMPLING

Date: 6/14/2020

Time: 9:10

Sample ID: OMC-MW-6065

Method of Sample Collection: grab

Analytical Parameters: VOCs, Metals, MNA

Q.C. Sample Type: N/A MS/MSD Duplicate Duplicate Sample ID:

Q.C. Parameters: N/A

Trash picked up? Y

Well locked? Y

SIGNED/SAMPLER: P. Scharch

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: **MN606D**

Field Crew: **L. Schorch**

Purpose of Sampling:

OMC Quarterly Sampling

Site: OMC

Field Conditions: **Partly Cloudy, 75°F**

## WELL CONDITION

Well Pad	Acceptable	Not Acceptable	Explain:
Protective Casing	Acceptable	Not Acceptable	Explain:
Well Casing	Acceptable	Not Acceptable	Explain:
Locking Cap	Acceptable	Not Acceptable	Explain:
Well Label (outside)	Acceptable	Not Acceptable	Explain: <b>no label</b>
Well Label (inside)	Acceptable	Not Acceptable	Explain:
J-Plug	Acceptable	Not Acceptable	Explain:

## PURGE METHOD

Date: **6/4/2020** Time: **9:50** Method: **low-flow**  
 Total Well Depth (ft) = **27.82**  
 Depth to Water (ft): = **3.97**  
 Water Column (ft): = **23.85** **3.8**

1 volume

Comments: **drawdown at 10:10, so lowered flow rate**

## OBSERVATIONS

Odor: None, **Low**, High, H<sub>2</sub>S, Fuel Like, Other:

Comments: **Black foamy purgewater**

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) ±0.1 s.u.	DO (mg/L) ±10%	ORP (mV) ±10 mV	Specific Conductance (mS/cm) ±3%	Temp (°C) ±3%	Turbidity (NTU) ≤10 NTU	Depth to water (feet)
10:05		220	7.24	1.37	-147.1	3.673	14.66	22.3	7.40
10:10		360	7.25	0.69	-159.4	3.607	14.79	16.7	8.24
10:15		200	7.27	0.56	-160.4	3.576	15.57	14.1	6.75
10:20		200	7.26	0.49	-163.9	3.520	16.48	14.1	6.82
10:25		200	7.24	0.44	-169.9	3.527	16.97	15.1	6.67
10:30	↓	200	7.21	0.44	-169.9	3.537	16.96	15.4	6.68
10:35	3.0	SAMPLED							

## SAMPLING

Date: **6/4/2020**

Time: **10:35**

Sample ID: **OMC-MW-606D**

Method of Sample Collection: **grab**

Analytical Parameters: **VOCs, Metals, MNA**

Q.C. Sample Type: **N/A** MS/MSD Duplicate Duplicate Sample ID:

Q.C. Parameters: **N/A**

Trash picked up? **Y**

Well locked? **Y**

SIGNED/SAMPLER:

**Laci Schorch**

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-6075

Field Crew: W. K. H.

Purpose of Sampling:

OMC Quarterly Sampling

Site: OMC

Field Conditions: sunny, 80s F, calm

## WELL CONDITION

Well Pad	Acceptable	Not Acceptable	Explain:
Protective Casing	Acceptable	Not Acceptable	Explain:
Well Casing	Acceptable	Not Acceptable	Explain:
Locking Cap	Acceptable	Not Acceptable	Explain:
Well Label (outside)	Acceptable	Not Acceptable	Explain:
Well Label (inside)	Acceptable	Not Acceptable	Explain:
J-Plug	Acceptable	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/3/20 Time: 1538 Method: low-flow

Total Well Depth (ft) = 9.82

Depth to Water (ft): = 3.45

Water Column (ft): = 6.37

1.0

1 volume

Comments:

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) ≤ 10 NTU	Depth to water (feet)
1543	0.25	200	7.45	0.42	-196.9	0.403	16.71	7.59	3.46
1548	0.50	200	7.44	0.36	-195.4	0.402	16.83	3.54	3.46
1553	0.75	200	7.44	0.38	-193.7	0.402	16.88	5.25	3.46
1558	1.00	200	7.44	0.32	-196.2	0.401	16.84	5.58	3.46
1603	1.25	200	7.42	0.29	-197.6	0.400	16.96	4.56	3.46
1608	1.50	200	7.42	0.30	-197.3	0.400	16.94	4.79	3.46

## SAMPLING

Date: 6/3/20

Time: 1610

Sample ID: OMC-MW-6075

Method of Sample Collection: grab

Analytical Parameters: VOCs, metals, MNA

Q.C. Sample Type:

MS/MSD

Duplicate

Duplicate Sample ID:

Q.C. Parameters:

Trash picked up?

Well locked?

SIGNED/SAMPLER:

W. K. H.



# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: **MW-607D** Field Crew: **Matt G.** Purpose of Sampling: **OMC Quarterly Sampling**  
 Site: **OMC** Field Conditions: **Sunny, 75°F**

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <b>N/A</b>
Well Label (outside)	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <b>Not present</b>
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: **06/04/20** Time: **1328** Method: **Low-Flow**  
 Total Well Depth (ft) = **27.62**  
 Depth to Water (ft): = **3.08**  
 Water Column (ft): = **24.54** **3.9**  
 Comments: 1 volume

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:  
 Comments: **Fe<sup>2+</sup> hit = 3.0 mg/L**

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.)	DO (mg/L)	ORP (mV)	Specific Conductance (mS/cm)	Temp (°C)	Turbidity (NTU)	Depth to water (feet)
	--	--	+/- 0.1 s.u.	+/- 10%	+/- 10 mV	+/- 3%	+/- 3%	<10 NTU	--
1330	0.1	300	7.42	2.59	76.5	1.679	16.20	0.0	4.3
1335	0.4	300	7.38	1.04	45.3	1.676	14.37	0.0	4.59
1340	0.7	300	7.29	0.65	12.7	1.655	13.94	0.0	4.68
1345	1.1	300	7.28	0.45	-36.8	1.627	13.79	0.0	4.70
1350	1.4	300	7.28	0.34	-50.2	1.642	14.01	0.0	4.60
1355	1.8	300	7.28	0.27	-53.3	1.656	14.50	0.0	4.50
1400	2.2	300	7.24	0.24	-58.6	1.663	14.70	0.0	4.50
1405	2.6	300	7.22	0.22	-62.3	1.670	13.94	0.0	4.50

## SAMPLING

Date: **06/04/20** Time: **1410**  
 Sample ID: **OMC-MW-607D** Method of Sample Collection: **Grab**  
 Analytical Parameters: **VOC, MVA, D35, Metals**  
 Q.C. Sample Type: **MS/MSD** Duplicate **Duplicate Sample ID:**  
 Q.C. Parameters:  
 Trash picked up? **Yes** Well locked? **Yes**  
 SIGNED/SAMPLER: **Matt Gaudin**

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-6105 Field Crew: Math G. Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: Sunny, 80°F

## WELL CONDITION

Well Pad	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <u>N/A</u>
Protective Casing	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain:
Well Casing	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain:
Locking Cap	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <u>N/A</u>
Well Label (outside)	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <u>Not present</u>
Well Label (inside)	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain:
J-Plug	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain:

## PURGE METHOD

Date: 06/02/20 Time: 1133 Method: Low-Flow  
 Total Well Depth (ft) = 30.02  
 Depth to Water (ft): = 5.72  
 Water Column (ft): = 24.3 3.9  
 Comments: 1 volume

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments: Black water initially when purging. May have touched bottom.

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.)	DO (mg/L)	ORP (mV)	Specific Conductance (mS/cm)	Temp (°C)	Turbidity (NTU)	Depth to water (feet)
	--	--	+/- 0.1 s.u.	+/- 10%	+/- 10 mV	+/- 3%	+/- 3%	<10 NTU	--
<u>1138</u>	<u>0.1</u>	<u>320</u>	<u>7.60</u>	<u>9.78</u>	<u>-7.8</u>	<u>0.794</u>	<u>14.46</u>	<u>0.5</u>	<u>5.76</u>
<u>1143</u>	<u>0.4</u>	<u>320</u>	<u>7.56</u>	<u>11.19</u>	<u>51.5</u>	<u>0.782</u>	<u>13.72</u>	<u>0.0</u>	<u>5.77</u>
<u>1148</u>	<u>1.0</u>	<u>320</u>	<u>7.52</u>	<u>11.56</u>	<u>84.4</u>	<u>0.783</u>	<u>13.60</u>	<u>0.0</u>	<u>5.78</u>
<u>1153</u>	<u>1.5</u>	<u>320</u>	<u>7.49</u>	<u>11.38</u>	<u>98.0</u>	<u>0.781</u>	<u>13.71</u>	<u>0.0</u>	<u>5.78</u>
<u>1158</u>	<u>2.1</u>	<u>320</u>	<u>7.47</u>	<u>11.32</u>	<u>116.2</u>	<u>0.779</u>	<u>13.52</u>	<u>0.0</u>	<u>5.78</u>
<u>1203</u>	<u>2.5</u>	<u>320</u>	<u>7.44</u>	<u>11.27</u>	<u>130.9</u>	<u>0.771</u>	<u>13.52</u>	<u>0.0</u>	<u>5.78</u>
<u>1208</u>	<u>3.0</u>	<u>320</u>	<u>7.41</u>	<u>11.35</u>	<u>149</u>	<u>0.761</u>	<u>13.59</u>	<u>0.0</u>	<u>5.78</u>
<u>1213</u>	<u>3.5</u>	<u>320</u>	<u>7.39</u>	<u>11.30</u>	<u>167.2</u>	<u>0.771</u>	<u>13.43</u>	<u>0.5</u>	<u>5.78</u>
<u>1218</u>	<u>4.0</u>	<u>320</u>	<u>7.36</u>	<u>11.39</u>	<u>179.4</u>	<u>0.771</u>	<u>13.24</u>	<u>1.3</u>	<u>5.78</u>
<u>1223</u>	<u>4.3</u>	<u>320</u>	<u>7.35</u>	<u>11.28</u>	<u>186.5</u>	<u>0.769</u>	<u>13.33</u>	<u>0.9</u>	<u>5.78</u>
<u>1228</u>	<u>4.6</u>	<u>320</u>	<u>7.33</u>	<u>11.35</u>	<u>189.2</u>	<u>0.772</u>	<u>13.29</u>	<u>1.6</u>	<u>5.78</u>

## SAMPLING

Date: 06/02/20 Time: 1235  
 Sample ID: OMC-MW-6105 Method of Sample Collection: Grab  
 Analytical Parameters: Vol, MNA, Diss Metals, PCBs  
 Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID:

Q.C. Parameters:

Trash picked up? Yes

Well locked? Yes

SIGNED/SAMPLER:

Math Halah

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: **MW-610D** Field Crew: **Matt G.** Purpose of Sampling: **OMC Quarterly Sampling**  
 Site: **OMC** Field Conditions: **Cloudy, 83°F**

## WELL CONDITION

Well Pad	Acceptable	Not Acceptable	Explain: <b>N/A</b>
Protective Casing	Acceptable	Not Acceptable	Explain:
Well Casing	Acceptable	Not Acceptable	Explain:
Locking Cap	Acceptable	Not Acceptable	Explain: <b>N/A</b>
Well Label (outside)	Acceptable	Not Acceptable	Explain: <b>Not present</b>
Well Label (inside)	Acceptable	Not Acceptable	Explain:
J-Plug	Acceptable	Not Acceptable	Explain:

## PURGE METHOD

Date: **06/02/20** Time: **1332** Method: **Low-flow**  
 Total Well Depth (ft) = **38**  
 Depth to Water (ft): = **5.6**  
 Water Column (ft): = **24.4** **3.9**  
 Comments: 1 volume

## OBSERVATIONS

Odor: **None**, Low, High, H<sub>2</sub>S, Fuel Like, Other:  
 Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.)	DO (mg/L)	ORP (mV)	Specific Conductance (mS/cm)	Temp (°C)	Turbidity (NTU)	Depth to water (feet)
	--	--	+/- 0.1 s.u.	+/- 10%	+/- 10 mV	+/- 3%	+/- 3%	<10 NTU	--
1336	0.1	300	7.31	2.10	-120.4	1.458	13.76	21.9	5.94
1341	0.5	300	7.26	0.75	-133.8	1.453	13.92	16	5.93
1346	0.9	300	7.25	0.51	-138.1	1.466	13.62	18.1	5.93
1351	1.4	300	7.24	0.36	-140.9	1.467	13.66	16.6	5.93
1356	2.0	300	7.23	0.33	-142	1.468	13.94	18.2	5.93
1404									

## SAMPLING

Date: **06/02/20** Time: **1405**  
 Sample ID: **OMC-MW-610D** Method of Sample Collection: **Grab**  
 Analytical Parameters: **DOC, NH<sub>4</sub>, Diss. Metals, PCB**  
 Q.C. Sample Type: **MS/MSD** Duplicate Duplicate Sample ID:

Q.C. Parameters:

Trash picked up? **Yes** Well locked? **Yes**  
 SIGNED/SAMPLER: **Matt G. Gully**

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: **MW612S**

Field Crew: **L. Scharch**

Purpose of Sampling:

OMC Quarterly Sampling

Site: **OMC**

Field Conditions: **SUNNY 73°F**

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain: concrete pad starting to rust on edges
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	Acceptable	<u>Not Acceptable</u>	Explain: no label on outside
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

\*WAS LOS

## PURGE METHOD

Date: **6/2/2020** Time: **8:28** Method: **low-flow**  
 Total Well Depth (ft) = **10.89**  
 Depth to Water (ft): = **3.40**  
 Water Column (ft): = **7.49** **1.2**  
 Comments: 1 volume

## OBSERVATIONS

Odor: None Low High H<sub>2</sub>S Fuel Like Other:

Comments: water is very light brown

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
8:48		200	6.74	0.51	-97.5	1.130	17.60	7.0	3.44
8:53		200	6.48	0.25	-95.7	1.160	16.23	3.5	3.44
8:58		200	6.49	0.16	-99.1	1.164	15.91	3.5	3.44
9:03		200	6.18	0.11	-93.6	1.168	15.59	2.3	3.44
9:08		200	6.06	0.09	-90.7	1.169	15.59	2.6	3.44
9:13		200	5.95	0.08	-87.9	1.167	15.55	2.7	3.44
9:18		200	5.79	0.07	-84.8	1.168	15.70	3.5	3.44
9:23		200	5.74	0.06	-83.2	1.164	15.70	3.4	3.44
9:28		200	5.65	0.06	-81.8	1.164	15.73	1.8	3.44
9:33		200	5.57	0.05	-81.3	1.167	15.63	2.8	3.44
9:38	✓	200	5.52	0.06	-79.2	1.165	15.70	3.0	3.44
9:43	4.5	200	5.47	0.05	-77.8	1.163	15.67	2.8	3.44

9:45 SAMPLED

## SAMPLING

Date: **6/2/2020**

Time: **9:45**

Sample ID: **OMC-MW-612S**

Method of Sample Collection: **grab**

Analytical Parameters: **VOCs, Metals, MNA**

Q.C. Sample Type: **MS/MSD**

Duplicate

Duplicate Sample ID: **OMC-MW-612S-R @ 9:55**

Q.C. Parameters: **VOCs, Metals, MNA**

Trash picked up? **y**

Well locked? **y**

SIGNED/SAMPLER:

**Raci-Scharch**

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: **MW612D** Field Crew: **L-Scharch** Purpose of Sampling: **OMC Quarterly Sampling**  
 Site: **OMC** Field Conditions: **Sunny 80°F**

## WELL CONDITION

Well Pad	Acceptable	Not Acceptable	Explain: <b>rust on edges of concrete pad</b>
Protective Casing	Acceptable	Not Acceptable	Explain: <b>* sprayed wasps +</b>
Well Casing	Acceptable	Not Acceptable	Explain: <b>Wasp nest @ 10:30</b>
Locking Cap	Acceptable	Not Acceptable	Explain: <b>WASPS in well cap + well cap is on 6/2/20</b>
Well Label (outside)	Acceptable	Not Acceptable	Explain: <b>no label on outside</b>
Well Label (inside)	Acceptable	Not Acceptable	Explain: <b>broken @ finger</b>
J-Plug	Acceptable	Not Acceptable	Explain:

## PURGE METHOD

Date: **6/2/2020** Time: **10:30** Method: **Low-Flow** **\* purged well on 6/3/2020 @ 8:15**  
 Total Well Depth (ft) = **26.62**  
 Depth to Water (ft): = **1.89**  
 Water Column (ft): = **24.73** **4.0**

Comments:

1 volume

**1 foot offset from total well depth**

## OBSERVATIONS

Odor: **None** (Low) High, H<sub>2</sub>S, Fuel Like, Other:

Comments: **Slightly foamy purge water; brown purge water w/ sheen**

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
8:20		200	6.66	0.38	-150.3	3.667	14.88	21.7	2.95
8:25		200	6.74	0.30	-167.0	3.660	15.07	19.7	2.95
8:30		200	6.81	0.17	-183.9	3.656	14.53	22.1	2.95
8:35		200	6.81	0.12	-187.1	3.664	14.10	21.7	2.95
8:40		200	6.80	0.10	-186.3	3.669	13.89	21.3	2.95
8:45		200	6.74	0.09	-180.6	3.692	13.91	20.5	2.97
8:50		200	6.68	0.09	-173.3	3.734	13.91	18.3	2.97
8:55		200	6.60	0.09	-163.9	3.808	13.84	14.6	2.97
9:00		200	6.54	0.09	-158.1	3.870	13.95	12.3	2.97
9:05		200	6.47	0.09	-150.0	3.929	13.61	11.0	2.97
9:10		200	6.42	0.09	-144.5	3.973	13.81	9.5	2.97
9:15	4.5	200	6.38	0.09	-140.3	3.960	14.15	9.9	2.97

**9:20 SAMPLED**

## SAMPLING

Date: **6/3/2020** Time: **9:20**  
 Sample ID: **OMC-MW-6120** Method of Sample Collection: **grab**

Analytical Parameters: **Metals, VOCs, MNA**

Q.C. Sample Type: **N/A** MS/MSD Duplicate Duplicate Sample ID:

Q.C. Parameters: **N/A**

Trash picked up? **Y**

Well locked? **Y**

SIGNED/SAMPLER:

**L-Scharch**



# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: mw-6135 Field Crew: W. Kite Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: 70°F, overcast, breezy

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	Acceptable	<u>Not Acceptable</u>	Explain: <u>could not find</u>
Well Label (inside)	Acceptable	<u>Not Acceptable</u>	Explain: <u>somewhat worn</u>
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/3/20 Time: 1229 Method: low-flow  
 Total Well Depth (ft) = 10.94  
 Depth to Water (ft): = 4.40  
 Water Column (ft): = 6.54 1.0  
 Comments: 1 volume

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:  
 Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.)	DO (mg/L)	ORP (mV)	Specific Conductance (mS/cm)	Temp (°C)	Turbidity (NTU)	Depth to water (feet)
			±0.1 s.u.	±10%	±10 mV	±3%	±3%	<10 NTU	
1234	0.5	400	7.18	1.35	180.7	1.408	12.40	6.25	5.40
1239	0.0	400	7.24	0.56	101.9	1.357	12.21	5.39	5.50
1244	1.5	400	7.21	0.50	28.8	1.370	12.12	5.60	5.60
1249	2.0	400	7.18	0.42	5.4	1.362	11.88	4.51	5.70
1254	2.5	400	7.19	0.34	1.8	1.359	12.20	5.16	5.81
1259	2.75	200	7.18	0.33	0.5	1.363	12.17	4.15	5.48
1304	3.00	200	7.19	0.29	3.7	1.357	12.19	3.29	5.48
1309	3.25	200	7.18	0.29	7.5	1.357	12.28	3.75	5.48

## SAMPLING

Date: 6/3/20 Time: 1315  
 Sample ID: OMC-mw6135 Method of Sample Collection: grab

Analytical Parameters: VOCS, metals, MNA

Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID:

Q.C. Parameters:

Trash picked up? Y Well locked? Y

SIGNED/SAMPLER: W. Kite

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: **MW-613D** Field Crew: **W. Kite** Purpose of Sampling: **OMC Quarterly Sampling**  
 Site: **OMC** Field Conditions: **70°F Sunny, calm**

## WELL CONDITION

Well Pad	Acceptable	Not Acceptable	Explain:
Protective Casing	Acceptable	Not Acceptable	Explain:
Well Casing	Acceptable	Not Acceptable	Explain:
Locking Cap	Acceptable	Not Acceptable	Explain:
Well Label (outside)	Acceptable	Not Acceptable	Explain:
Well Label (inside)	Acceptable	Not Acceptable	Explain:
J-Plug	Acceptable	Not Acceptable	Explain:

## PURGE METHOD

Date: **6/3/20** Time: **1344** Method: **low-flow**  
 Total Well Depth (ft) = **25.79**  
 Depth to Water (ft): = **4.26**  
 Water Column (ft): = **21.53** **3.4**  
 Comments: 1 volume

## OBSERVATIONS

Odor: None, Low, High, **H<sub>2</sub>S**, Fuel Like, Other:

Comments: **Fe = 0.25 mg/L** **Oily water (felt)**

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.)	DO (mg/L)	ORP (mV)	Specific Conductance (mS/cm)	Temp (°C)	Turbidity (NTU)	Depth to water (feet)
			+/- 0.1 s.u.	+/- 10%	+/- 10 mV	+/- 3%	+/- 3%	<10 NTU	--
1349	0.25	200	7.37	0.43	-276.5	2.417	12.50	10.4	5.35
1354	0.50	200	7.39	0.30	-299.9	2.389	12.40	9.9	5.51
1359	0.75	200	7.40	0.28	-300.8	2.345	12.37	10.3	5.51
1404	1.00	200	7.36	0.42	-312.4	2.412	12.47	8.28	5.51
1409	1.25	200	7.35	0.42	-312.9	2.385	12.57	7.16	5.51
1414	1.50	200	7.42	0.36	-311.7	2.351	12.49	9.17	5.51
1419	1.75	200	7.40	0.32	-311.5	2.315	12.46	8.09	5.51
1424	2.00	200	7.40	0.28	-309.9	2.302	12.44	7.71	5.51
1429	2.25	200	7.36	0.27	-309.4	2.277	12.67	9.84	5.51
1434	2.50	200	7.35	0.27	-310.0	2.265	12.8		5.51

## SAMPLING

Date: **6/3/20** Time: **1435**  
 Sample ID: **OMC - MW-613D** Method of Sample Collection: **grab**  
 Analytical Parameters: **VOCs, metals, MNA, PCB**  
 Q.C. Sample Type: **MS/MSD** Duplicate Duplicate Sample ID:

Q.C. Parameters:

Trash picked up? **Y**

Well locked? **Y**

SIGNED/SAMPLER:



# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW 6145 Field Crew: I. Scharich Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: Cloudy 69°F

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	<u>Acceptable</u>	Not <u>Acceptable</u>	Explain: <u>no label on outside</u>
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/3/2020 Time: 10:10 Method: low-flow  
 Total Well Depth (ft) = 10.80  
 Depth to Water (ft): = 3.03  
 Water Column (ft): = 7.77 1.2  
 Comments: 1 volume

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments: clear purge water

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) ≤ 10 NTU	Depth to water (feet)
10:24		210	6.99	1.31	94.2	0.813	14.04	2.6	3.14
10:29		210	6.72	0.40	29.1	0.789	14.11	0.0	3.14
10:34		210	6.70	0.24	-33.7	0.767	13.99	0.0	3.14
10:39		210	6.75	0.16	-62.8	0.744	13.83	0.0	3.14
10:44		210	6.76	0.14	-67.8	0.737	13.74	0.0	3.14
10:49		210	6.76	0.12	-72.1	0.728	13.83	0.0	3.14
10:54		210	6.77	0.11	-76.6	0.723	13.78	0.0	3.14
10:59		210	6.77	0.11	-77.9	0.720	13.75	0.0	3.14
11:05		SAMPLED							

## SAMPLING

Date: 6/3/2020 Time: 11:05  
 Sample ID: OMC-MW-6145 Method of Sample Collection: grab  
 Analytical Parameters: Metals, VOCs, MSA  
 Q.C. Sample Type: N/A MS/MSD Duplicate Duplicate Sample ID:  
 Q.C. Parameters: N/A

Trash picked up? X Well locked? X  
 SIGNED/SAMPLER: I. Scharich

## Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: **MW614D** Field Crew: **L. Scharch** Purpose of Sampling: **OMC Quarterly Sampling**  
 Site: **OMC** Field Conditions: **Cloudy 70°F**

## WELL CONDITION

Well Pad	Acceptable	Not Acceptable	Explain:
Protective Casing	Acceptable	Not Acceptable	Explain:
Well Casing	Acceptable	Not Acceptable	Explain:
Locking Cap	Acceptable	Not Acceptable	Explain:
Well Label (outside)	Acceptable	Not Acceptable	Explain: <b>no label</b>
Well Label (inside)	Acceptable	Not Acceptable	Explain:
J-Plug	Acceptable	Not Acceptable	Explain:

## PURGE METHOD

Date: **6/3/2020** Time: **11:18** Method: **low-flow**  
 Total Well Depth (ft) = **29.78**  
 Depth to Water (ft): = **2.98**  
 Water Column (ft): = **26.8** **4.3**  
 1 volume

Comments:

## OBSERVATIONS

Odor: **None**, **Low**, High, H<sub>2</sub>S, Fuel Like, Other:

Comments:

**brown foamy water****\*no water coming out of well, turned off pump and readjusted tubing**

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.)	DO (mg/L)	ORP (mV)	Specific Conductance (mS/cm)	Temp (°C)	Turbidity (NTU)	Depth to water (feet)
	--	--	+/- 0.1 s.u.	+/- 10%	+/- 10 mV	+/- 3%	+/- 3%	<10 NTU	--
11:22	1	240	7.50	8.20	-1.0	3.844	13.24	2.1	9.56
11:27		240	7.50	8.18	-10.9	3.854	13.25	2.5	9.56
11:32		240	7.56	8.20	-11.3	3.863	14.33	14.9	10.73
11:37		240	7.57	8.26	-115.7	3.874	14.34	14.8	14.01
11:42		200	7.71	8.45	-49.1	3.821	15.06	36.1	14.10
11:47		150	7.72	8.51	-16.1	3.794	14.59	40.0	14.31
12:04		200	8.34	6.13	77.1	4.143	15.02	13.0	11.60
12:08		200	7.81	1.53	91.7	4.277	14.55	10.6	14.01
12:13		200	7.69	0.10	61.6	4.456	13.46	14.6	17.01
12:18		200	7.66	0.06	-8.8	4.477	13.57	12.5	18.46
12:23		200	7.64	0.05	-74.2	4.477	13.45	19.3	20.37
12:28	↓	240	7.56	0.03	-119.3	4.427	13.29	19.4	22.51

## SAMPLING

Date: **6/3/2020**Time: **14:15**Sample ID: **OMC-MW-614D**Method of Sample Collection: **grab**Analytical Parameters: **VOCs, Metals, MNA, PH****PH: 3**Q.C. Sample Type: **N/A** MS/MSD Duplicate Duplicate Sample ID:Q.C. Parameters: **N/A**Trash picked up? **Y**Well locked? **Y**

SIGNED/SAMPLER:

**L. Scharch**

## Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW014D Field Crew: L. Scharch Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: Cloudy 70°F

## WELL CONDITION

	Acceptable	Not Acceptable	Explain:
Well Pad			
Protective Casing			
Well Casing			
Locking Cap			
Well Label (outside)			
Well Label (inside)			
J-Plug			

SEE PG. 1

## PURGE METHOD

Date: Time: Method: low-flow

Total Well Depth (ft): =

Depth to Water (ft): =

Water Column (ft): =

1 volume

Comments:

SEE PG. 1

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:Comments: \*lowered flow rate due to drawdown

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
12:33		240	7.48	0.09	-121.7	4.363	13.52	19.6	22.71
12:38		240	7.46	0.08	-105.6	4.412	13.41	24.4	24.92
12:43		240	7.42	0.11	-88.8	4.429	13.62	25.5	24.93
12:48		260	7.40	0.44	-72.5	4.449	13.92	22.9	24.93
12:53		240	7.33	1.06	-29.0	4.450	13.87	22.2	24.93
12:58		240	7.24	2.00	35.9	4.416	13.84	38.1	24.93
13:03		240	7.23	5.32	80.9	4.446	13.99	180.0	24.93
13:08		<200	7.33	7.06	223.1	4.513	16.48	3.3	25.2 *
13:13		<200	7.35	6.71	232.6	4.518	16.74	2.9	2500' 24.5
13:18		<200	7.41	6.13	248.4	4.507	17.46	2.4	22.5
13:23		<200	7.47	5.96	264.7	4.528	17.98	5.9	21.7
13:28		<200	7.54	4.50	299.6	4.544	18.59	3.6	20.2

## SAMPLING

Date:

Time:

Sample ID:

Method of Sample Collection: grab

Analytical Parameters:

see pg. 1

Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID:

Q.C. Parameters:

Trash picked up?

Well locked?

SIGNED/SAMPLER:

Rach Scharch



## Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: **MW614D** Field Crew: **h. Scharch** Purpose of Sampling: **OMC Quarterly Sampling**  
 Site: **OMC** Field Conditions: **cloudy 70°F**

## WELL CONDITION

	Acceptable	Not Acceptable	Explain:
Well Pad			
Protective Casing			
Well Casing			
Locking Cap			
Well Label (outside)			
Well Label (inside)			
J-Plug			

See pg. 1

## PURGE METHOD

Date: Time: Method: low-flow

Total Well Depth (ft): =

Depth to Water (ft): =

Water Column (ft): =

1 volume

Comments:

See pg. 1

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments: \* due to amount purged, sampled @ 14:15 See pg. 1

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) ≤ 10 NTU	Depth to water (feet)
12:33		<200	7.52	3.38	323.3	4.554	18.25	6.4	20.40
13:38		<200	7.49	2.29	341.3	4.557	18.31	6.5	18.90
13:43		<200	7.44	1.89	358.6	4.575	17.90	4.5	17.90
13:48		<200	7.38	0.97	371.7	4.574	17.48	4.8	17.25
13:51		<200	7.35	0.62	379.0	4.562	17.37	2.7	17.20
13:54		<200	7.35	0.57	382.2	4.559	17.37	2.9	16.52
13:57		<200	7.35	0.46	386.1	4.554	17.32	3.2	16.50
14:00		<200	7.37	0.34	388.7	4.558	17.30	2.9	16.50
14:03		<200	7.38	0.32	390.3	4.558	17.32	2.0	16.50
14:06		<200	7.39	0.27	392.1	4.561	17.31	3.9	16.10
14:09		<200	7.42	0.23	394.3	4.564	17.23	2.9	15.82
* 14:15	10.0	SAMPLED							

## SAMPLING

Date:

Time:

Sample ID:

Method of Sample Collection: grab

See pg. 1

Analytical Parameters:

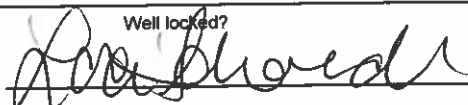
Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID:

Q.C. Parameters:

Trash picked up?

Well locked?

SIGNED/SAMPLER:



# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: **mw-6155**

Field Crew: **W. Kite**

Purpose of Sampling:

OMC Quarterly Sampling

Site: OMC

Field Conditions:

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: **6/1/20** Time: **1455** Method: low-flow

Total Well Depth (ft) = **11.43**

Depth to Water (ft): = **4.49**

Water Column (ft): = **6.94**

1 volume

Comments:

## OBSERVATIONS

Odor: None Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
1455	Begin	pump	6.92						
1500	0.4	300	6.91	0.95	-77.8	0.668	13.13	4.2	4.55
1505	0.7	300	6.99	0.51	-86.8	0.657	13.35	7.6	4.55
1510	1.2	300	7.09	0.43	-96.2	0.656	13.17	5.5	4.55
1515	1.6	300	7.20	0.40	-94.6	0.656	12.92	4.3	4.55
1520	2.0	300	7.18	0.40	-94.2	0.656	12.94	4.2	4.55
1525	2.4	300	7.21	0.40	-91.4	0.654	12.81	8.8	4.55

## SAMPLING

Date: **6/1/20**

Time: **1530**

Sample ID: **OMC-mw-6155**

Method of Sample Collection: grab

Analytical Parameters: **VOCs, metals, MNA**

Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID:

Q.C. Parameters:

Trash picked up? **N/A**

Well locked? **yes**

SIGNED/SAMPLER:

**W. Kite**

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-615D

Field Crew: W. Kik

Purpose of Sampling:

OMC Quarterly Sampling

Site: OMC

Field Conditions: 70s F, breezy, partly sunny

## WELL CONDITION

Well Pad	Acceptable	Not Acceptable	Explain:
Protective Casing	Acceptable	Not Acceptable	Explain:
Well Casing	Acceptable	Not Acceptable	Explain:
Locking Cap	Acceptable	Not Acceptable	Explain:
Well Label (outside)	Acceptable	Not Acceptable	Explain:
Well Label (inside)	Acceptable	Not Acceptable	Explain:
J-Plug	Acceptable	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/1/20 Time: 15:51 Method: low-flow

Total Well Depth (ft) = 27.36

Depth to Water (ft): = 4.01

Water Column (ft): = 23.35

1 volume

Comments:

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
1551	Begin purging								
1556	0.4	300	8.35	0.55	30.1	3.391	12.67	4.4	5.94
1601	0.8	300	8.45	0.44	8.5	3.395	12.03	4.1	5.94
1606	1.2	300	8.59	0.32	8.6	3.418	11.55	3.7	5.94
1611	1.6	300	8.82	0.37	4.5	3.564	11.43	2.1	5.94
1616	2.0	300	9.06	0.27	-262.4	3.796	11.53	0.7	5.94
1621	2.4	300	9.09	0.33	-304.2	3.831	11.49	1.5	5.94
1626	2.8	300	9.14	0.25	-272.6	3.908	11.52	1.7	5.94
1631	3.2	300	9.14	0.25	-315.3	3.940	11.72	7.8	5.94
1636	3.6	300	9.10	0.25	-309.4	3.947	11.82	2.0	6.09
1641	4.0	300	9.11	0.25	-314.6	3.950	11.78	6.1	6.09

## SAMPLING

Date: 6/1/20

Time: 1645

Sample ID: OMC-MW-615D

Method of Sample Collection: grab

Analytical Parameters: VOCs, Metals, MnA

Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID:

Q.C. Parameters:

Trash picked up? N/A

Well locked? Y

SIGNED/SAMPLER: W-KP

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: **MW-6195** Field Crew: **W. Kitz** Purpose of Sampling: **OMC Quarterly Sampling**  
 Site: **OMC** Field Conditions: **70°F, overcast, breezy**

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: **6/3/20** Time: **1006** Method: **low-flow**  
 Total Well Depth (ft) = **10.25**  
 Depth to Water (ft): = **4.10**  
 Water Column (ft): = **6.35** **1.1**

Comments:

1 volume

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) ±0.1 s.u.	DO (mg/L) ±10%	ORP (mV) ±10 mV	Specific Conductance (mS/cm) ±3%	Temp (°C) ±3%	Turbidity (NTU) ≤10 NTU	Depth to water (feet)
1011	0.5	400	8.08	1.40	162.4	0.401	12.91	5.54	4.14
1016	0.510	400	7.97	0.66	161.4	0.378	12.63	5.75	4.14
1021	0.5	400	7.91	0.66	154.4	0.368	12.91	5.60	4.14
1026	0.520	400	7.89	0.41	148.9	0.366	12.91	5.89	4.14
1031	0.5	400	7.89	0.47	146.0	0.366	12.89	6.10	4.14
1036	0.530	400	7.88	0.34	140.2	0.364	12.87	5.55	4.14
1041	0.5	400	7.88	0.34	139.8	0.364	12.89	5.15	4.14
1046	0.540	400	7.88	0.33	137.3	0.364	12.85	5.35	4.14

## SAMPLING

Date: **6/3/20** Time: **1050**  
 Sample ID: **OMC-MW-6195** Method of Sample Collection: **grab**

Analytical Parameters: **VOCs, metals, MNA**

Q.C. Sample Type: **MS/MSD** Duplicate Duplicate Sample ID:

Q.C. Parameters:

Trash picked up? **Y** Well locked? **Y**

SIGNED/SAMPLER:

**W. Kitz**

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-619D Field Crew: W. Kite Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: 60°F, overcast, slight breeze

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain: <u>Shifts when stepped on</u>
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/3/20 Time: 0845 Method: low-flow  
 Total Well Depth (ft): = 29.59  
 Depth to Water (ft): = 4.12  
 Water Column (ft): = 25.47 4.1  
 Comments: 1 volume

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:  
 Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
0.5	0.5	400	7.90	0.63	-108.9	1.310	10.81	7.83	4.83
1.0	0.5	400	8.01	0.43	-107.8	1.315	10.70	7.01	4.83
1.5	0.5	400	8.02	0.42	-107.0	1.321	10.67	14.0	4.83
2.0	0.5	400	8.17	0.54	-114.8	1.569	10.88	13.9	4.83
2.5	0.5	400	8.25	0.48	-131.7	1.630	10.89	9.74	4.83
3.0	0.5	400	8.29	0.44	-142.9	1.679	10.80	8.15	4.83
3.5	0.5	400	8.45	0.33	-167.0	1.774	10.81	10.3	4.83
4.0	0.5	400	8.58	0.30	-187.0	1.865	11.00	9.06	4.83
4.5	0.5	400	8.67	0.27	-196.2	1.936	10.97	9.19	4.83
5.0	0.5	400	8.70	0.26	-196.1	1.942	10.98	7.05	4.83
5.5	0.5	400	8.71	0.27	-196.1	1.947	10.92	9.18	4.83
	<u>10</u>								

## SAMPLING

Date: 6/3/20 Time: 0945  
 Sample ID: OMC-MW-619D Method of Sample Collection: grab

Analytical Parameters: VOCs, metals, MNA

Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID:

Q.C. Parameters:

Trash picked up? Y

Well locked? Y

SIGNED/SAMPLER: W. Kite



# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW620S Field Crew: L. Scharch Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: Partly cloudy, 79°F

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain: <u>no lock</u>
Well Label (outside)	<u>Acceptable</u>	Not Acceptable	Explain: <u>no label</u>
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/14/2020 Time: 13:00 Method: low-flow  
 Total Well Depth (ft) = 10.99  
 Depth to Water (ft): = 4.54  
 Water Column (ft): = 6.45 1.0  
 1 volume

Comments:

## OBSERVATIONS

Odor: None Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments: Clear

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
13:07		280	7.00	1.17	-89.7	1.097	15.69	1.9	4.89
13:12		260	6.89	0.160	-85.0	1.135	15.43	2.5	4.89
13:17		260	6.89	0.52	-85.5	1.140	15.32	1.7	4.89
13:22		260	6.90	0.48	-81.3	1.141	15.36	1.2	4.89
13:27		260	6.90	0.46	-77.9	1.141	15.43	1.0	4.89
13:32	↓	260	6.90	0.43	-75.9	1.141	15.49	1.2	4.89
13:35	4.0	SAMPLED							

## SAMPLING

Date: 6/14/2020 Time: 13:35  
 Sample ID: OMC-MW-620S Method of Sample Collection: grab  
 Analytical Parameters: Metals, VOCs, MNA  
 Q.C. Sample Type: N/A MS/MSD Duplicate Duplicate Sample ID:  
 Q.C. Parameters: N/A

Trash picked up? Y Well locked? Y

SIGNED/SAMPLER:

Loe Johnson

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-620D Field Crew: J. Graham Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: 75°F Overcast

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/4/20 Time: 1240 Method: low-flow  
 Total Well Depth (ft) = 30.64  
 Depth to Water (ft) = 4.38  
 Water Column (ft) = 26.64 4.3  
 1 volume  
 Comments:

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments:

Black Particulates @ Start of purge, purge directly into bucket for 30

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) ≤ 10 NTU	Depth to water (feet)
1245	<u>START PURGE</u>								
1250		<u>300</u>	<u>6.93</u>	<u>1.95</u>	<u>-116.5</u>	<u>2.837</u>	<u>16.02</u>	<u>30.5</u>	<u>5.62</u>
1255		<u>300</u>	<u>6.90</u>	<u>0.98</u>	<u>-124.2</u>	<u>3.016</u>	<u>15.07</u>	<u>15.7</u>	<u>5.62</u>
1300		<u>300</u>	<u>6.90</u>	<u>0.72</u>	<u>-123.1</u>	<u>2.986</u>	<u>14.76</u>	<u>11.7</u>	<u>5.62</u>
1305		<u>300</u>	<u>6.89</u>	<u>0.69</u>	<u>-122.7</u>	<u>3.063</u>	<u>14.66</u>	<u>10.7</u>	<u>5.62</u>
1310		<u>300</u>	<u>6.89</u>	<u>0.62</u>	<u>-122.1</u>	<u>2.916</u>	<u>14.85</u>	<u>9.9</u>	<u>5.64</u>
1315		<u>300</u>	<u>6.89</u>	<u>0.57</u>	<u>-120.8</u>	<u>2.997</u>	<u>15.02</u>	<u>8.8</u>	<u>5.64</u>
1320		<u>300</u>	<u>6.90</u>	<u>0.55</u>	<u>-120.0</u>	<u>2.984</u>	<u>15.00</u>	<u>8.6</u>	<u>5.65</u>
1325	<u>SAMPLE</u>								

## SAMPLING

Date: 6/4/20 Time: 1325  
 Sample ID: OMC-MW-620D Method of Sample Collection: grab

Analytical Parameters: VOCs, MNA

Q.C. Sample Type: N/A MS/MSD Duplicate Duplicate Sample ID: N/A

Q.C. Parameters: N/A

Trash picked up? Y Well locked? Y

SIGNED/SAMPLER: [Signature]

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: **MW-6215** Field Crew: **W. Kite** Purpose of Sampling: **OMC Quarterly Sampling**  
 Site: **OMC** Field Conditions: **Sunny, 70s F, Calm**

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: **6/4/20** Time: **1134** Method: **low-flow**  
 Total Well Depth (ft) = **10.27**  
 Depth to Water (ft): = **4.84**  
 Water Column (ft): = **6.05** **1.0**  
 Comments: **1 volume**

## OBSERVATIONS

Odor: None Low High H<sub>2</sub>S Fuel Like Other:  
 Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
1139	0.5	400	6.70	0.63	-88.6	1.294	12.47	15.3	6.60
1144	1.0	400	6.61	1.251	-88.0	1.251	12.28	15.2	6.56
1149	1.5	400	6.64	0.58	-91.1	1.249	12.19	30.9	6.56
1154	2.0	400	6.66	0.58	-103.2	1.239	12.12	20.0	6.54
1159	2.5	400	6.69	0.39	-103.8	1.234	12.05	16.8	6.51
1204	3.0	400	6.69	0.37	-103.5	1.230	12.22	18.7	6.51
1209	3.5	200	6.70	0.37	-104.1	1.228	12.91	2.8	6.51
1214	4.0	200	6.75	0.34	-114.3	1.195	12.85	4.7	5.62
1219	4.0	200	6.77	0.34	-113.2	1.159	12.87	4.9	5.62
1224	4.25	200	6.78	0.33	-110.6	1.209	12.84	1.7	5.62

## SAMPLING

Date: **6/4/20** Time: **1230**  
 Sample ID: **OMC-MW-6215** Method of Sample Collection: **grab**  
 Analytical Parameters: **DOCs, mNA, metals**  
 Q.C. Sample Type: **MS/MSD** Duplicate Duplicate Sample ID: **OMC-MW-6215-12 @ 1235**  
 Q.C. Parameters: **0 SAA**

Trash picked up? **Y** Well locked? **Y**

SIGNED/SAMPLER: **W. Kite**

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-621D Field Crew: W. Kite Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: 70s F, Sunny, humid

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: \_\_\_\_\_ Time: 1247 Method: low-flow  
 Total Well Depth (ft): \_\_\_\_\_  
 Depth to Water (ft): = 4.52  
 Water Column (ft): \_\_\_\_\_  
 Comments: \_\_\_\_\_  
 1 volume

## OBSERVATIONS

Odor: None Low, High, H<sub>2</sub>S, Fuel Like, Other:  
 Comments: \_\_\_\_\_

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) ≤10 NTU	Depth to water (feet)
1252	0.25	200	6.41	0.83	-70.2	3.942	12.14	64.2	6.62
1257	0.50	200	6.41	0.54	-72.5	3.957	12.20	115.0	8.26
1302	0.75	200	6.37	0.42	-81.9	4.008	12.69	50.8	7.46
1307	0.87	100	6.32	0.37	-87.1	4.042	12.98	30.6	7.48
1312	1.00	100	6.32	0.36	-88.6	4.041	12.91	29.4	7.50
1317	1.12	100	6.32	0.35	-88.4	4.041	13.03	17.7	7.54
1322	1.25	100	6.31	0.34	-88.4	4.047	13.04	11.9	7.56
1327	1.37	100	6.31	0.34	-88.1	4.044	13.02	12.4	7.57
1332	1.50	100	6.30	0.33	-89.4	4.043	13.03	13.1	7.59
1337	1.62	100	6.30	0.33	-90.9	4.042	13.05	12.5	7.60

## SAMPLING

Date: 6/4/20 Time: 1340  
 Sample ID: OMC-mw-621D Method of Sample Collection: grab pH = 3  
 Analytical Parameters: VOCs, metals, MNA  
 Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID:  
 Q.C. Parameters:

Trash picked up? Y Well locked? Y  
 SIGNED/SAMPLER: [Signature]

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-6235 Field Crew: Matt G. Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: Swamp, 70°F

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <u>N/A</u>
Well Label (outside)	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <u>Not present</u>
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 06/04/20 Time: Method: low-flow  
 Total Well Depth (ft) = 10.65  
 Depth to Water (ft): = 3.28  
 Water Column (ft): = 7.45 11.9  
 Comments: 1 volume

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:  
 Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.)	DO (mg/L)	ORP (mV)	Specific Conductance (mS/cm)	Temp (°C)	Turbidity (NTU)	Depth to water (feet)
			+/- 0.1 s.u.	+/- 10%	+/- 10 mV	+/- 3%	+/- 3%	<10 NTU	--
0828	0.1	320	6.93	3.19	-98.1	0.533	17.24	38.4	3.30
0833	0.5	320	6.93	1.42	-112	0.511	16.17	1.0	3.30
0838	0.9	320	6.91	1.11	-118.8	0.514	16.14	0.0	3.30
0843	1.3	320	7.04	0.94	-127.4	0.515	16.24	0.0	3.30
0848	1.7	320	7.19	0.81	-139	0.517	16.72	0.0	3.30
0853	2.0	320	7.23	0.75	-141.8	0.515	16.82	0.0	3.30
0858	2.4	320	7.28	0.69	-145.4	0.516	16.73	0.0	3.30

## SAMPLING

Date: 06/04/20 Time: 0905  
 Sample ID: OMC-MW-6235 Method of Sample Collection: grab  
 Analytical Parameters: VOC, MHA, DZs Metals, PCBs  
 Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID:  
 Q.C. Parameters:  
 Trash picked up? Yes Well locked? Yes  
 SIGNED/SAMPLER: Matt G.



# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-623D Field Crew: Mat G. Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: Sunny, 80°F

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <u>N/A</u>
Well Label (outside)	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <u>Not present</u>
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 06/03/20 Time: 1411 Method: low-flow  
 Total Well Depth (ft) = 34.19  
 Depth to Water (ft): = 3.35  
 Water Column (ft): = 30.84 4.9  
 Comments: 1 volume

## OBSERVATIONS

Odor: None Low, High, H<sub>2</sub>S, Fuel Like, Other:  
 Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
1414	0.1	280	7.68	2.38	42.4	0.653	15.14	7.3	4.43
1419	0.5	280	7.52	1.16	-95.9	0.677	14.37	7.6	4.70
1424	0.9	280	7.50	0.95	-115	0.682	14.02	0.0	4.75
1429	1.9	280	7.49	0.72	-126.6	0.687	13.99	0.4	4.75
1434	2.1	280	7.48	0.64	-128.3	0.686	14.82	1.0	4.75
1439	2.4	280	7.47	0.56	-130.5	0.688	13.97	0.4	4.75
1444	2.9	280	7.47	0.51	-132.7	0.686	14.85	2.1	4.75
1449	3.3	280	7.48	0.47	-134.4	0.685	14.86	2.1	4.75

## SAMPLING

Date: 06/03/20 Time: 1455  
 Sample ID: OMC-MW-623D Method of Sample Collection: grab

Analytical Parameters: VOC, MNA, Diss. Metals, PCBs

Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID:

Q.C. Parameters:

Trash picked up? Yes

Well locked? Yes

SIGNED/SAMPLER:

Mat G. Arbal

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-6245 Field Crew: Matt & Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: Sample 82°F

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <u>N/A</u>
Well Label (outside)	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <u>Not present</u>
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 06/04/20 Time: 1151 Method: Low-Flow  
 Total Well Depth (ft) = 10.88  
 Depth to Water (ft): = 5.20  
 Water Column (ft): = 5.68 0.9  
 Comments: 1 volume

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.)	DO (mg/L)	ORP (mV)	Specific Conductance (mS/cm)	Temp (°C)	Turbidity (NTU)	Depth to water (feet)
	--	--	+/- 0.1 s.u.	+/- 10%	+/- 10 mV	+/- 3%	+/- 3%	<10 NTU	--
1155	0.1	300	7.62	2.25	15.5	0.600	20.67	0.0	5.23
1200	0.4	300	7.38	1.77	63.1	0.491	17.72	0.0	5.23
1205	0.9	200	7.29	1.79	106.6	0.468	17.29	0.0	5.23
1210	1.4	300	7.23	1.73	136.7	0.464	16.89	0.0	5.23
1215	1.8	300	7.20	1.68	156.5	0.457	16.26	0.0	5.23
1220	2.2	300	7.21	1.62	168.6	0.449	16.72	0.0	5.23
1225	2.5	300	7.22	1.54	175.8	0.459	16.61	0.0	5.23
1230	3.0	300	7.22	1.51	179.8	0.457	16.81	0.0	5.23

## SAMPLING

Date: 06/04/20 Time: 1235  
 Sample ID: OMC MW-6245 Method of Sample Collection: Grab  
 Analytical Parameters: VOC MNA, DGA, Metals, PCBs  
 Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID:

Q.C. Parameters:

Trash picked up? Yes Well locked? Yes  
 SIGNED/SAMPLER: Matt Lyndel

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: **MW-6240** Field Crew: **Matt G.** Purpose of Sampling: **OMC Quarterly Sampling**  
 Site: **OMC** Field Conditions: **Sunny, 85°F**

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <b>N/A</b>
Well Label (outside)	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <b>Not present</b>
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: **06/04/20** Time: **1020** Method: **Low-Flow**  
 Total Well Depth (ft) = **36.70**  
 Depth to Water (ft): = **5.27**  
 Water Column (ft): = **31.43** **5.0**  
 Comments: 1 volume

## OBSERVATIONS

Odor: None Low, High, H<sub>2</sub>S, Fuel Like, Other:  
 Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) ±0.1 s.u.	DO (mg/L) ±10%	ORP (mV) ±10 mV	Specific Conductance (mS/cm) ±3%	Temp (°C) ±3%	Turbidity (NTU) ≤10 NTU	Depth to water (feet)
1022	0.1	280	7.50	2.36	60.4	1.915	18.80	0.0	5.80
1027	0.4	280	7.42	1.39	71.3	1.934	16.26	0.0	5.80
1032	0.8	280	7.37	1.05	88.2	1.922	15.89	0.0	5.75
1037	1.1	280	7.34	0.89	104.7	1.925	15.26	0.0	5.75
1042	1.4	280	7.30	0.80	122.1	1.922	14.98	0.0	5.75
1047	1.7	280	7.30	0.68	46.3	2.086	15.29	0.0	5.75
1052	2.0	280	7.34	0.58	-81.4	2.242	15.32	0.0	5.75
1057	2.4	280	7.36	0.53	-93.0	2.286	15.22	0.0	5.75
1102	2.8	280	7.36	0.52	-100.1	2.305	15.28	0.0	5.75

## SAMPLING

Date: **06/04/20** Time: **1110**  
 Sample ID: **OMC-MW-6240** Method of Sample Collection: **Grab**

Analytical Parameters: **DOC, MHA, Diss. Metals, PCBs**  
 Q.C. Sample Type: **MS/MSD** Duplicate Duplicate Sample ID:

Q.C. Parameters:

Trash picked up? **Yes** Well locked? **Yes**  
 SIGNED/SAMPLER: **Matt G. [Signature]**

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-0255 Field Crew: W. Kite Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: 90°F, sunny, breezy

## WELL CONDITION

Well Pad	Acceptable	Not Acceptable	Explain: <u>Under water</u>
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	Acceptable	<u>Not Acceptable</u>	Explain: <u>No lock</u>
Well Label (outside)	Acceptable	<u>Not Acceptable</u>	Explain: <u>Not found</u>
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/2/20 Time: 1353 Method: low-flow  
 Total Well Depth (ft) = 11.66  
 Depth to Water (ft): = 2.79  
 Water Column (ft): = 8.87 1.4  
 Comments: 1 volume

## OBSERVATIONS

Odor: None Low, High, H<sub>2</sub>S, Fuel Like, Other:  
 Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) <10 NTU	Depth to water (feet) --
1358	0.5	400	8.03	1.10	-13.5	0.367	13.47	0	2.83
1403	1.0	400	7.97	0.42	-77.9	0.348	13.77	0	2.83
1408	1.5	400	7.95	0.36	-88.3	0.346	13.81	0	2.83
1413	2.0	400	7.94	0.33	-105.5	0.343	13.62	0	2.83
1418	2.5	400	7.94	0.31	-106.6	0.343	13.70	0	2.83
1423	3.0	400	7.92	0.29	-97.9	0.341	13.76	0	2.83

## SAMPLING

Date: 6/2/20 Time: 1430  
 Sample ID: OMC-MW-6255 Method of Sample Collection: grab  
 Analytical Parameters: VOCs, Metals, MNA  
 Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID:  
 Q.C. Parameters:  
 Trash picked up? N/A Well locked? No Lock  
 SIGNED/SAMPLER: W. Kite

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-62SD Field Crew: W. Kite Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: 90°F, sunny, breezy

## WELL CONDITION

Well Pad	Acceptable	Not Acceptable	Explain: <u>under water</u>
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <u>no lock</u>
Well Label (outside)	Acceptable	<u>Not Acceptable</u>	Explain: <u>not found</u>
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/2/20 Time: 1241 Method: low-flow  
 Total Well Depth (ft) = 30.01  
 Depth to Water (ft): = 3.37  
 Water Column (ft): = 26.64 4.3

Comments: 1 volume

## OBSERVATIONS

Odor: None Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.)	DO (mg/L)	ORP (mV)	Specific Conductance (mS/cm)	Temp (°C)	Turbidity (NTU)	Depth to water (feet)
	--	--	+/- 0.1 s.u.	+/- 10%	+/- 10 mV	+/- 3%	+/- 3%	<10 NTU	--
1246	0.5	400	7.41	0.51	-67.3	1.971	12.51	0	3.80
1251	1.0	400	7.44	0.45	-64.7	1.970	12.46	0	3.80
1256	1.5	400	7.45	0.40	-61.9	1.981	12.50	0	3.80
1301	2.0	400	7.57	0.38	-73.9	2.431	12.49	0	3.80
1306	2.5	400	8.48	0.30	-123.8	2.839	12.43	0	3.80
1311	3.0	400	8.54	0.28	-101.2	2.860	12.41	0	3.80
1316	3.5	400	8.57	0.27	-86.7	2.873	12.43	0	3.80
1321	4.0	400	8.59	0.26	-81.6	2.881	12.43	0	3.82
1326	4.5	400	8.55	0.26	-80.4	2.871	12.37	0	3.82

## SAMPLING

Date: 6/2/20 Time: 1330  
 Sample ID: OMC-MW-62SD Method of Sample Collection: grab  
 Analytical Parameters: VOCs, Metals, MNA  
 Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID:

Q.C. Parameters:

Trash picked up? Y Well locked? No lock

SIGNED/SAMPLER: W. Kite

## Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW6265 Field Crew: L. Scharch Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: partly cloudy 83°F

## WELL CONDITION

Well Pad	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <u>15</u>
Protective Casing	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain:
Well Casing	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain:
Locking Cap	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <u>no lock</u>
Well Label (outside)	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <u>no outside label</u>
Well Label (inside)	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain:
J-Plug	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain:

## PURGE METHOD

Date: 6/3/2020 Time: 15:30 Method: low-flow  
 Total Well Depth (ft): 12.50  
 Depth to Water (ft): 5.50  
 Water Column (ft): 7.0  
 Comments: 1 volume

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:Comments: light brown purge water

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
15:30	1	310	6.68	0.72	-28.3	1.333	13.22	2.1	5.48
15:35		260	6.20	0.21	-77.2	1.260	13.37	0.0	5.46
15:40		260	6.12	0.17	-80.9	1.240	13.13	1.1	5.46
15:45		260	5.94	0.13	-84.9	1.213	12.98	0.8	5.46
15:50		260	5.85	0.10	-86.4	1.198	13.05	0.2	5.46
15:55		260	5.77	0.08	-86.3	1.188	13.14	0.9	5.46
16:00		260	5.71	0.07	-87.9	1.176	13.20	0.5	5.46
16:05		260	5.64	0.07	-88.3	1.170	13.23	0.7	5.46
16:10		260	5.52	0.06	-85.4	1.158	13.22	1.1	5.46
16:15		240	5.36	0.06	-83.8	1.161	13.32	0.0	5.46
16:20		240	5.28	0.06	-81.9	1.149	13.41	0.0	5.46
16:25	✓	240	5.17	0.05	-79.1	1.145	13.53	0.1	5.46

## SAMPLING

Date: 6/3/2020 Time: 16:40  
 Sample ID: OMC-MW-6265 Method of Sample Collection: grab  
 Analytical Parameters: Metals, VOCs, MNA  
 Q.C. Sample Type: N/A MS/MSD Duplicate Duplicate Sample ID:  
 Q.C. Parameters: N/A

Trash picked up? YWell locked? YSIGNED/SAMPLER: L. Scharch



## Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW6265 Field Crew: L. Scharch Purpose of Sampling: OMC Quarterly Sampling  
Site: OMC Field Conditions: Partly Cloudy, 83°F

**WELL CONDITION**

Well Pad	Acceptable	Not Acceptable	Explain:
Protective Casing	Acceptable	Not Acceptable	Explain:
Well Casing	Acceptable	Not Acceptable	Explain:
Locking Cap	Acceptable	Not Acceptable	Explain:
Well Label (outside)	Acceptable	Not Acceptable	Explain:
Well Label (inside)	Acceptable	Not Acceptable	Explain:
J-Plug	Acceptable	Not Acceptable	Explain:

see pg. 1

## PURGE METHOD

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Method: low-flow

Total Well Depth (ft) =

Depth to Water (ft): =

Water Column (ft): =

**Comments:**

1 volume

## OBSERVATIONS

Odor: None , Low , High , H<sub>2</sub>S , Fuel Like , Other:

Comments:

## FIELD PARAMETERS

[illegible]

## SAMPLING

Date:

Time:

**Sample ID:**

Method of Sample Collection: grab

**Analytical Parameters:**

Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID:

**Q.C. Parameters:**

Trash picked up?

**SIGNED/SAMPLER:**

Well locked?

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW626D Field Crew: L. Scharch Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: partly cloudy, 82°F

## WELL CONDITION

Well Pad	Acceptable	Not Acceptable	Explain:
Protective Casing	Acceptable	Not Acceptable	Explain:
Well Casing	Acceptable	Not Acceptable	Explain:
Locking Cap	Acceptable	Not Acceptable	Explain: <u>no lock</u>
Well Label (outside)	Acceptable	Not Acceptable	Explain: <u>no label</u>
Well Label (inside)	Acceptable	Not Acceptable	Explain:
J-Plug	Acceptable	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/4/2020 Time: 11:20 Method: low-flow  
 Total Well Depth (ft) = 29.25  
 Depth to Water (ft): = 5.67  
 Water Column (ft): = 23.58 3.8  
 1 volume

Comments:

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments: mostly clear, brown light purge water

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
11:30		320	7.93	2.72	-134.1	3.275	13.52	6.4	6.23
11:35		320	7.95	1.37	-150.6	3.217	13.23	8.7	6.51
11:40		320	7.83	0.74	-150.5	2.729	12.96	10.2	6.51
11:45		320	7.80	0.63	-147.7	2.609	12.71	2.2	6.51
11:50		320	7.83	0.58	-141.3	2.561	12.69	1.2	6.51
11:55		320	7.83	0.54	-153.2	2.540	12.55	0.8	6.51
12:00		320	7.84	0.52	-156.3	2.526	12.73	0.8	6.51
12:05		320	7.84	0.47	-143.1	2.516	12.59	1.3	6.51
12:10		320	7.84	0.45	-146.0	2.506	12.61	0.9	6.51
12:15		320	7.84	0.45	-145.5	2.505	12.44	1.4	6.51
12:20	5.0	SAMPLED							

## SAMPLING

Date: 6/4/2020 Time: 12:20  
 Sample ID: OMC-MW-626D Method of Sample Collection: grab  
 Analytical Parameters: VOCs, Metals, MNA  
 Q.C. Sample Type: N/A MS/MSD Duplicate Duplicate Sample ID:  
 Q.C. Parameters: N/A

Trash picked up? Y  
 SIGNED/SAMPLER:

Well locked? X  
L. Scharch

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: ST-MW-15 Field Crew: J. Graham Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: 75°F Sunny Windy

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <u>N/A</u>
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/2/20 Time: 1305 Method: low-flow  
 Total Well Depth (ft) = 11.39  
 Depth to Water (ft) = 1.36  
 Water Column (ft) = 10.03 1.6  
 Comments: 1 volume

## OBSERVATIONS

Odor: None Low High H<sub>2</sub>S Fuel Like Other:  
 Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) ≤10 NTU	Depth to water (feet)
1310	START PURGE								
1315	0.4	300	7.03	1.18	17.2	0.697	15.65	11.6	1.59
1320	0.8	300	6.90	0.90	-19.7	0.958	15.27	5.0	1.59
1325	1.2	300	6.91	0.68	-41.0	1.028	15.22	4.1	1.59
1330	1.6	300	6.92	0.70	-56.4	1.071	15.35	2.4	1.60
1335	2.0	300	6.93	0.66	-58.9	1.078	15.47	1.9	1.60
1340	2.4	300	6.93	0.60	-62.5	1.117	15.19	0.8	1.60
1345	2.8	300	6.94	0.58	-65.2	1.134	15.10	0.9	1.60
1350	3.2	300	6.95	0.51	-68.0	1.146	15.22	1.0	1.60
1355	SAMPLE								

## SAMPLING

Date: 6/2/20 Time: 1355  
 Sample ID: OMC-MW-ST-15-2 Method of Sample Collection: grab  
 Analytical Parameters: VOCs, TOC, ALK, Anions, MEE, Sulfide, PCBs, Diss Metals  
 Q.C. Sample Type: MS/MSD Duplicate Sample ID: OMC-MW-ST-15-2 1400  
 Q.C. Parameters: SAME AS PARENT OMC-ST-MW-15-2  
 Trash picked up? Y Well locked? Y  
 SIGNED/SAMPLER: [Signature]

# Monitoring Well

ST-MW-1D (RM) Field Data Sheet - OMC Groundwater Site

Well Number: ~~MLW-ST-1D~~ Field Crew: Purpose of Sampling: OMC Quarterly Sampling

Site: OMC Field Conditions:

## WELL CONDITION

Well Pad	Acceptable	Not Acceptable	Explain:
Protective Casing	Acceptable	Not Acceptable	Explain:
Well Casing	Acceptable	Not Acceptable	Explain:
Locking Cap	Acceptable	Not Acceptable	Explain:
Well Label (outside)	Acceptable	Not Acceptable	Explain: N/A
Well Label (inside)	Acceptable	Not Acceptable	Explain: N/A
J-Plug	Acceptable	Not Acceptable	Explain:

## PURGE METHOD

Date: 06/2/20 Time: 1115 Method: low-flow

Total Well Depth (ft): 22.91

Depth to Water (ft): 1.16

Water Column (ft): 21.75

Comments: 1 volume

## OBSERVATIONS

Odor: None Low High H<sub>2</sub>S Fuel Like Other:

Comments:

Product present during purge

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) ≤10 NTU	Depth to water (feet)
1120	START PURGE								
1125	0.5	350	7.02	1.17	62.1	1.511	14.60	21.3	1.25
1130	1.0	350	7.01	0.75	-70.6	1.839	14.37	20.2	1.25
1135	1.5	350	6.99	0.64	-75.9	1.924	14.49	18.4	1.26
1140	2.0	350	6.98	0.53	-76.5	1.953	14.54	18.8	1.26
1145	2.5	350	6.98	0.51	-77.3	1.981	14.53	18.5	1.26
1150	3.0	350	6.99	0.49	-78.2	2.037	14.58	20.3	1.26
1155	3.5	350	6.99	0.46	-78.6	2.052	14.43	14.9	1.27
1200	4.0	350	6.99	0.45	-78.6	2.052	14.43	14.8	1.26
1205	4.5	350	6.99	0.43	-78.4	2.067	14.44	14.2	1.26
1210	SAMPLE								

## SAMPLING

Date: 6/2/20 Time: 1210

Sample ID: OMC-MW-ST-1D Method of Sample Collection: grab

Analytical Parameters: VOCs, TOC, Alk, Anions, Sulfide, d.s.s Metals, MEE, PLDB

Q.C. Sample Type: N/A MS/MSD Duplicate Duplicate Sample ID: N/A

Q.C. Parameters: N/A

Trash picked up? ☒ Well locked? ☒

SIGNED/SAMPLER: 

# Monitoring Well

ST- Field Data Sheet - OMC Groundwater Site

Well Number: MW-2S Field Crew: J. Graham Purpose of Sampling: OMC Quarterly Sampling

Site: OMC Field Conditions: 80°F Sunny Windy

## WELL CONDITION

Well Pad	Acceptable	Not Acceptable	Explain:
Protective Casing	Acceptable	Not Acceptable	Explain:
Well Casing	Acceptable	Not Acceptable	Explain:
Locking Cap	Acceptable	Not Acceptable	Explain:
Well Label (outside)	Acceptable	Not Acceptable	Explain: N/A
Well Label (inside)	Acceptable	Not Acceptable	Explain:
J-Plug	Acceptable	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/2/20 Time: 1455 Method:

Total Well Depth (ft) = 10.20

Depth to Water (ft): = 1.00

Water Column (ft): = 9.20 1.5

Comments: 1 volume

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.)	DO (mg/L)	ORP (mV)	Specific Conductance (mS/cm)	Temp (°C)	Turbidity (NTU)	Depth to water (feet)
	--	--	+/- 0.1 s.u.	+/- 10%	+/- 10 mV	+/- 3%	+/- 3%	<10 NTU	--
1500	START PURGE								
1505	0.4	300	6.92	0.95	-68.5	0.747	13.75	87.5	1.05
1510	0.8	300	6.88	0.71	-74.1	0.751	13.55	23.7	1.05
1515	1.2	300	6.85	0.53	-73.4	0.738	13.63	10.6	1.05
1520	1.6	300	6.85	0.53	-76.3	0.717	13.39	7.3	1.06
1525	2.0	300	6.87	0.52	-80.6	0.711	13.32	6.5	1.06
1530	2.4	300	6.88	0.49	-89.1	0.694	13.40	4.5	1.07
1535	2.8	300	6.89	0.47	-87.1	0.701	13.30	3.9	1.06
1540	SAMPLE								

## SAMPLING

Date: 6/2/2020 Time: 1540

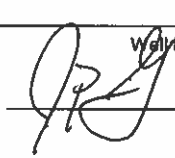
Sample ID: OMC-ST-MW-2S Method of Sample Collection: grab

Analytical Parameters: VOCs, TOC, Diss Metals, MEE, Sulfide, ALC, Anions, PCBs

Q.C. Sample Type: N/A MS/MSD Duplicate Duplicate Sample ID: N/A

Q.C. Parameters: N/A

Trash picked up? ☒ Well locked? ☒

SIGNED/SAMPLER: 

## Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: ST-MW-2D Field Crew: J. Arnhem Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: Overcast 65°F Windy

### WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <u>N/A</u>
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

### PURGE METHOD

Date: 6/3/20 Time: 0755 Method: low-flow  
 Total Well Depth (ft) = 22.18  
 Depth to Water (ft): = 0.90  
 Water Column (ft): = 21.28 3.4  
 Comments: 1 volume

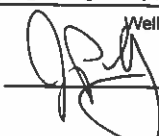
### OBSERVATIONS

Odor: None Low, High, H<sub>2</sub>S, Fuel Like, Other:  
 Comments:

### FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.)	DO (mg/L)	ORP (mV)	Specific Conductance (mS/cm)	Temp (°C)	Turbidity (NTU)	Depth to water (feet)
	--	--	+/- 0.1 s.u.	+/- 10%	+/- 10 mV	+/- 3%	+/- 3%	<10 NTU	--
<u>0800</u>	<u>Start Purge</u>								
<u>0805</u>	<u>0.5</u>	<u>350</u>	<u>6.56</u>	<u>15.3</u>	<u>-87.6</u>	<u>1.085</u>	<u>11.63</u>	<u>222.9</u>	<u>1.05</u>
<u>0810</u>	<u>1.0</u>	<u>350</u>	<u>6.84</u>	<u>0.91</u>	<u>-107.7</u>	<u>1.103</u>	<u>11.37</u>	<u>239.4</u>	<u>1.05</u>
<u>0815</u>	<u>1.5</u>	<u>350</u>	<u>6.92</u>	<u>0.72</u>	<u>-114.1</u>	<u>1.133</u>	<u>11.31</u>	<u>117.6</u>	<u>1.05</u>
<u>0820</u>	<u>2.0</u>	<u>350</u>	<u>6.96</u>	<u>0.64</u>	<u>-118.1</u>	<u>1.139</u>	<u>11.28</u>	<u>92.8</u>	<u>1.05</u>
<u>0825</u>	<u>2.5</u>	<u>350</u>	<u>6.99</u>	<u>0.59</u>	<u>-120.5</u>	<u>1.149</u>	<u>11.17</u>	<u>82.9</u>	<u>1.05</u>
<u>0830</u>	<u>3.0</u>	<u>350</u>	<u>7.01</u>	<u>0.58</u>	<u>-123.0</u>	<u>1.153</u>	<u>11.25</u>	<u>70.6</u>	<u>1.05</u>
<u>0835</u>	<u>3.5</u>	<u>350</u>	<u>7.03</u>	<u>0.52</u>	<u>-125.6</u>	<u>1.150</u>	<u>11.38</u>	<u>46.3</u>	<u>1.05</u>
<u>0840</u>	<u>4.0</u>	<u>350</u>	<u>7.05</u>	<u>0.50</u>	<u>-127.5</u>	<u>1.184</u>	<u>11.28</u>	<u>35.9</u>	<u>1.05</u>
<u>0845</u>	<u>4.5</u>	<u>350</u>	<u>7.06</u>	<u>0.49</u>	<u>-128.9</u>	<u>1.165</u>	<u>11.25</u>	<u>30.0</u>	<u>1.05</u>
<u>0850</u>	<u>5.0</u>	<u>350</u>	<u>7.07</u>	<u>0.47</u>	<u>-130.0</u>	<u>1.165</u>	<u>11.18</u>	<u>15.5</u>	<u>1.05</u>
<u>0855</u>	<u>5.5</u>	<u>350</u>	<u>7.08</u>	<u>0.46</u>	<u>-131.2</u>	<u>1.163</u>	<u>11.25</u>	<u>16.1</u>	<u>1.05</u>

### SAMPLING

Date: 6/3/20 Time: 0905  
 Sample ID: OMC-ST-MW-2D Method of Sample Collection: grab  
 Analytical Parameters: VOCs, MNA, PCBs  
 Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID: SAME AS PARENT  
 Q.C. Parameters: SAME AS PARENT  
 Trash picked up? Y Well locked? Y  
 SIGNED/SAMPLER: 



## Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: 95-MW-2D Field Crew: 5 Graham Purpose of Sampling: OMC Quarterly Sampling  
Site: OMC Field Conditions: 1.5" overcast windy

**WELL CONDITION**

Well Pad	Acceptable	Not Acceptable	Explain:
Protective Casing	Acceptable	Not Acceptable	Explain:
Well Casing	Acceptable	Not Acceptable	Explain:
Locking Cap	Acceptable	Not Acceptable	Explain:
Well Label (outside)	Acceptable	Not Acceptable	Explain:
Well Label (inside)	Acceptable	Not Acceptable	Explain:
J-Plug	Acceptable	Not Acceptable	Explain:

See pg 1

### PURGE METHOD

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Method: low-flow

Total Well Depth (ft) =

Depth to Water (ft): =

Water Column (ft): =

Comments:

1 volume

See pg 1

## OBSERVATIONS

Odor:           None   ,   Low   ,   High   ,   H<sub>2</sub>S   ,   Fuel Like   ,   Other:

**Comments:**

See p. 27

## FIELD PARAMETERS

[illegible]

## SAMPLING

Date:

Time:

**Sample ID:**

Method of Sample Collection: grab

### Analytical Parameters:

**Q.C. Sample Type:**

MS/MSD

**Duplicate**

**Duplicate Sample ID:**

**Q.C. Parameters:**

### Trash picked up?

Well looked?

**SIGNED/SAMPLER:**

Well looked

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: ST-MW-35 Field Crew: S. Graham Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: 6/3/20

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <u>N/A</u>
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/3/20 Time: 1015 Method: low-flow  
 Total Well Depth (ft) = 10.53  
 Depth to Water (ft): = 0.70  
 Water Column (ft): = 9.8 1.6  
 1 volume

Comments:

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.)	DO (mg/L)	ORP (mV)	Specific Conductance (mS/cm)	Temp (°C)	Turbidity (NTU)	Depth to water (feet)
	--	--	+/- 0.1 s.u.	+/- 10%	+/- 10 mV	+/- 3%	+/- 3%	<10 NTU	--
<u>1025</u>	<u>START PURGE</u>								
<u>1030</u>	<u>0.5</u>	<u>400</u>	<u>7.21</u>	<u>2.03</u>	<u>-46.7</u>	<u>1.351</u>	<u>13.78</u>	<u>14.25</u>	<u>0.80</u>
<u>1035</u>	<u>1.0</u>	<u>400</u>	<u>7.27</u>	<u>0.84</u>	<u>-75.4</u>	<u>1.313</u>	<u>13.59</u>	<u>46.4</u>	<u>0.80</u>
<u>1040</u>	<u>1.5</u>	<u>400</u>	<u>7.27</u>	<u>0.68</u>	<u>-84.0</u>	<u>1.302</u>	<u>13.51</u>	<u>39.5</u>	<u>0.78</u>
<u>1045</u>	<u>2.0</u>	<u>400</u>	<u>7.28</u>	<u>0.60</u>	<u>-89.4</u>	<u>1.303</u>	<u>13.53</u>	<u>24.5</u>	<u>0.79</u>
<u>1050</u>	<u>2.5</u>	<u>400</u>	<u>7.32</u>	<u>0.56</u>	<u>-92.6</u>	<u>1.305</u>	<u>13.54</u>	<u>18.7</u>	<u>0.78</u>
<u>1055</u>	<u>3.0</u>	<u>400</u>	<u>7.32</u>	<u>0.52</u>	<u>-96.1</u>	<u>1.305</u>	<u>13.47</u>	<u>14.0</u>	<u>0.79</u>
<u>1100</u>	<u>3.5</u>	<u>400</u>	<u>7.31</u>	<u>0.50</u>	<u>-98.5</u>	<u>1.304</u>	<u>13.42</u>	<u>9.9</u>	<u>0.80</u>
<u>1105</u>	<u>4.0</u>	<u>400</u>	<u>7.32</u>	<u>0.49</u>	<u>-101.2</u>	<u>1.305</u>	<u>13.51</u>	<u>9.6</u>	<u>0.80</u>
<u>1110</u>	<u>4.5</u>	<u>400</u>	<u>7.33</u>	<u>0.47</u>	<u>-102.7</u>	<u>1.306</u>	<u>13.52</u>	<u>9.2</u>	<u>0.80</u>
<u>1115</u>	<u>SAMPLE JPG</u>								

## SAMPLING

Date: 6/3/20 Time: 1115  
 Sample ID: OMC-ST-MW-35 Method of Sample Collection: grab  
 Analytical Parameters: VOCs, PCBs, MNA  
 Q.C. Sample Type: N/A MS/MSD Duplicate Duplicate Sample ID: N/A  
 Q.C. Parameters: N/A

Trash picked up? 9

SIGNED/SAMPLER: [Signature]

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: ST-MW-3D Field Crew: J. Graham Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: 65°F Overcast

## WELL CONDITION

Well Pad Acceptable Not Acceptable Explain:  
 Protective Casing Acceptable Not Acceptable Explain:  
 Well Casing Acceptable Not Acceptable Explain:  
 Locking Cap Acceptable Not Acceptable Explain:  
 Well Label (outside) Acceptable Not Acceptable Explain: N/A  
 Well Label (inside) Acceptable Not Acceptable Explain:  
 J-Plug Acceptable Not Acceptable Explain:

## PURGE METHOD

Date: 6/3/20 Time: 11:55 Method: low-flow  
 Total Well Depth (ft) = 18.73  
 Depth to Water (ft) = 0.70  
 Water Column (ft) = 18.03 2.9  
 1 volume  
 Comments:

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments:

Water is cloudy dark gray

PH test = ~1.0

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.)	DO (mg/L)	ORP (mV)	Specific Conductance (mS/cm)	Temp (°C)	Turbidity (NTU)	Depth to water (feet)
			+/- 0.1 s.u.	+/- 10%	+/- 10 mV	+/- 3%	+/- 3%	<10 NTU	--
<u>1200</u>	<u>START PURGE</u>								
<u>1205</u>	<u>0.5</u>	<u>400</u>	<u>7.25</u>	<u>1.17</u>	<u>-49.3</u>	<u>1.374</u>	<u>12.87</u>	<u>110.2</u>	<u>0.80</u>
<u>1210</u>	<u>1.0</u>	<u>400</u>	<u>7.24</u>	<u>0.84</u>	<u>-52.6</u>	<u>1.334</u>	<u>12.82</u>	<u>67.4</u>	<u>0.80</u>
<u>1215</u>	<u>1.5</u>	<u>400</u>	<u>7.23</u>	<u>0.73</u>	<u>-55.8</u>	<u>1.327</u>	<u>12.80</u>	<u>44.3</u>	<u>0.80</u>
<u>1220</u>	<u>2.0</u>	<u>400</u>	<u>7.21</u>	<u>0.68</u>	<u>-58.7</u>	<u>1.344</u>	<u>12.82</u>	<u>34.6</u>	<u>0.81</u>
<u>1225</u>	<u>2.5</u>	<u>400</u>	<u>7.20</u>	<u>0.63</u>	<u>-62.9</u>	<u>1.352</u>	<u>12.85</u>	<u>25.1</u>	<u>0.81</u>
<u>1230</u>	<u>3.0</u>	<u>400</u>	<u>7.23</u>	<u>0.61</u>	<u>-66.7</u>	<u>1.328</u>	<u>12.76</u>	<u>20.8</u>	<u>0.81</u>
<u>1235</u>	<u>3.5</u>	<u>400</u>	<u>7.21</u>	<u>0.59</u>	<u>-69.6</u>	<u>1.320</u>	<u>12.78</u>	<u>15.2</u>	<u>0.81</u>
<u>1240</u>	<u>4.0</u>	<u>400</u>	<u>7.20</u>	<u>0.57</u>	<u>-72.2</u>	<u>1.316</u>	<u>12.75</u>	<u>10.8</u>	<u>0.82</u>
<u>1245</u>	<u>4.5</u>	<u>400</u>	<u>7.21</u>	<u>0.53</u>	<u>-76.1</u>	<u>1.283</u>	<u>12.67</u>	<u>7.4</u>	<u>0.82</u>
<u>1250</u>	<u>5.0</u>	<u>400</u>	<u>7.21</u>	<u>0.50</u>	<u>-77.8</u>	<u>1.269</u>	<u>12.72</u>	<u>9.5</u>	<u>0.82</u>
<u>1255</u>	<u>5.8</u>	<u>400</u>	<u>7.21</u>	<u>0.50</u>	<u>-80.0</u>	<u>1.275</u>	<u>12.70</u>	<u>8.7</u>	<u>0.82</u>

## SAMPLING

Date: 6/3/20 Time: 1300  
 Sample ID: OMC-ST-MW-3D Method of Sample Collection: grab

Analytical Parameters: VOCs, MNA, PCBs

Q.C. Sample Type: N/A MS/MSD Duplicate Duplicate Sample ID: N/A

Q.C. Parameters: N/A

Trash picked up? Y

Well Locked? Y

SIGNED/SAMPLER:

[Signature]

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: ST-MW-45 Field Crew: S. Graham Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: 75°F Sunny

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <u>N/A</u>
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/14/20 Time: 0745 Method: low-flow  
 Total Well Depth (ft) = 11.79  
 Depth to Water (ft): = 2.63  
 Water Column (ft): = 9.10 1.5  
 1 volume  
 Comments:

## OBSERVATIONS

Odor: None Low, High, H<sub>2</sub>S, Fuel Like, Other:  
 Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
0745	<u>START PURGE</u>								
0750		200	6.38	3.94	271	1.799	15.49	24.6	2.70
0755		200	6.95	0.95	-90.8	1.776	14.93	11.3	2.70
0800		200	7.03	0.80	-95.9	1.727	14.84	5.7	2.71
0805		200	7.08	0.68	-100.4	1.705	14.82	0.0	2.71
0810		200	7.12	0.61	-126.3	1.682	14.80	0.0	2.70
0815		200	7.13	0.56	-127.3	1.688	14.84	0.0	2.71
0820		200	7.12	0.54	-123.6	1.653	14.70	7.9	2.71
0825	<u>SAMPLE</u>								

## SAMPLING

Date: 6/14/20 Time: 0825  
 Sample ID: OMC-ST-MW-45 Method of Sample Collection: grab  
 Analytical Parameters: VOCS, PCBS, MMA  
 Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID: N/A  
 Q.C. Parameters: N/A  
 Trash picked up? Y Well locked? Y  
 SIGNED/SAMPLER: [Signature]

## Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: ST-MW-4D Field Crew: J. Graham Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: 75°F Sun 7/1

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	<u>Acceptable</u>	<u>Not Acceptable</u>	Explain: <u>N/A</u>
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/3/20 Time: 1335 Method: low-flow  
 Total Well Depth (ft) =  
 Depth to Water (ft): = 2.53  
 Water Column (ft): =

1 volume

Comments:

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments:

## FIELD PARAMETERS

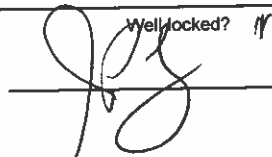
Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
1340	START PURGE								
1345		200	7.90	5.44	-7.2	0.155	14.05	327.0	3.73
1350		200	7.92	4.72	-7.2	0.175	14.04	229.3	3.65
1355		200	7.86	3.58	-3.4	0.275	13.93	147.5	3.63
1400		200	7.83	3.26	-3.3	0.307	13.80	119.7	3.63
1405		200	7.77	2.94	-3.1	0.397	13.78	108.3	3.63
1410		200	7.73	2.63	-3.4	0.487	13.82	81.0	3.61
1415		200	7.69	2.46	-4.0	0.518	13.68	62.1	3.60
1420		200	7.66	2.25	-5.3	0.612	13.77	45.1	3.60
1425		200	7.60	2.05	-6.2	0.715	13.71	29.7	3.60
1430		200	7.55	1.91	-6.7	0.808	13.80	27.6	3.60
1435		200	7.51	1.79	-7.4	0.870	13.76	22.6	3.60

## SAMPLING

Date: 6/3/20 Time: 1515  
 Sample ID: OMC-ST-MW-4D Method of Sample Collection: grab  
 Analytical Parameters: VOCs, PCBs, MUNA  
 Q.C. Sample Type: MS/MSD Duplicate Duplicate Sample ID: N/A

Q.C. Parameters: N/ATrash picked up? YWell locked? Y

SIGNED/SAMPLER:



## Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: ST-MW-4D Field Crew: \_\_\_\_\_

**Purpose of Sampling:**

### OMC Quarterly Sampling

Site: OMC

**Field Conditions:**

### WELL CONDITION

Well Pad	Acceptable	Not Acceptable	Explain:
Protective Casing	Acceptable	Not Acceptable	Explain:
Well Casing	Acceptable	Not Acceptable	Explain:
Locking Cap	Acceptable	Not Acceptable	Explain:
Well Label (outside)	Acceptable	Not Acceptable	Explain:
Well Label (inside)	Acceptable	Not Acceptable	Explain:
J-Plug	Acceptable	Not Acceptable	Explain:

See pg 1

### PURGE METHOD

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Method: low-flow

Total Well Depth (ft) =

Depth to Water (ft): =

Water Column (ft): =

1 volume

### Comments:

### OBSERVATIONS

Odor:	None	Low	High	H <sub>2</sub> S	Fuel Like	Other:
-------	------	-----	------	------------------	-----------	--------

Comments:

## FIELD PARAMETERS

[illegible]

## SAMPLING

Date:

Time:

**Sample ID:**

Method of Sample Collection: grab

**Analytical Parameters:**

**Q.C. Sample Type:**

MS/MSD

**Duplicate**

**Duplicate Sample ID:**

**Q.C. Parameters:**

Trash picked up?

## Well locked?

**SIGNED/SAMPLER:**



## Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: MW-55

Field Crew: J. Graham

**Purpose of Sampling:**

### OMC Quarterly Sampling

Site: OMC

Field Conditions: 75°F Sunny

**WELL CONDITION**

Well Pad	Acceptable	Not Acceptable	Explain:
Protective Casing	Acceptable	Not Acceptable	Explain:
Well Casing	Acceptable	Not Acceptable	Explain:
Locking Cap	Acceptable	Not Acceptable	Explain:
Well Label (outside)	Acceptable	Not Acceptable	Explain:
Well Label (inside)	Acceptable	Not Acceptable	Explain:
J-Plug	Acceptable	Not Acceptable	Explain:

### PURGE METHOD

Date: 6/4/20	Time: 1040	Method: low-flow
Total Well Depth (ft)	= 14.10	
Depth to Water (ft):	= 3.29	
Water Column (ft):	= 10.81	1.7
Comments: (10.81) km		1 volume

### OBSERVATIONS

Odor: ~~None~~ Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments:

## FIELD PARAMETERS

[illegible]

## SAMPLING

Date: 6/4/20

Time: 11 15

Sample ID: OMC-ST-MW-55

Method of Sample Collection: grab

Analytical Parameters: VOCs, PCBs, MNAs

**Q.C. Sample Type:**

MS/MSD

**Duplicate**

Duplicate Sample ID: SAME AS PARENT

**Q.C. Parameters:**

SAME AS PARENT

**Trash picked up?**

### Well locked?

**SIGNED/SAMPLER:**

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: ST-MW-SD Field Crew: J. Graham Purpose of Sampling: OMC Quarterly Sampling  
 Site: OMC Field Conditions: 75°F Sunny

## WELL CONDITION

Well Pad	<u>Acceptable</u>	Not Acceptable	Explain:
Protective Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Well Casing	<u>Acceptable</u>	Not Acceptable	Explain:
Locking Cap	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (outside)	<u>Acceptable</u>	Not Acceptable	Explain:
Well Label (inside)	<u>Acceptable</u>	Not Acceptable	Explain:
J-Plug	<u>Acceptable</u>	Not Acceptable	Explain:

## PURGE METHOD

Date: 6/4/20 Time: 0910 Method: low-flow  
 Total Well Depth (ft) = 25.45  
 Depth to Water (ft): = 3.25  
 Water Column (ft): = 22.20 3.6  
 1 volume  
 Comments:

## OBSERVATIONS

Odor: None, Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.) +/- 0.1 s.u.	DO (mg/L) +/- 10%	ORP (mV) +/- 10 mV	Specific Conductance (mS/cm) +/- 3%	Temp (°C) +/- 3%	Turbidity (NTU) <10 NTU	Depth to water (feet)
0915	START PURGE								
0920	0.5	375	7.42	0.96	-123.2	1.252	14.67	3.8	3.32
0925	1.0	375	7.41	0.65	-134.4	1.344	14.47	10.0	3.32
0930	1.5	375	7.41	0.58	-135.8	1.358	14.40	8.9	3.32
0935	2.0	375	7.42	0.56	-136.6	1.060	14.47	12.5	3.32
0940	2.5	375	7.42	0.52	-138.1	0.919	14.41	9.1	3.32
0945	3.0	375	7.42	0.56	-138.2	0.857	14.38	8.6	3.32
0950	3.5	375	7.42	0.49	-140.0	0.962	14.32	9.9	3.32
0955	4.0	375	7.43	0.57	-140.0	0.901	14.41	7.4	3.32
1000	4.5	375	7.43	0.46	-139.9	0.896	14.39	4.5	3.33
1005	5.0	375	7.43	0.45	-139.8	0.888	14.42	4.1	3.33
1010	SAMPLE								

## SAMPLING

Date: 6/4/20 Time: 1010  
 Sample ID: OMC-ST-MW-SD Method of Sample Collection: grab  
 Analytical Parameters: VOCs, PCBs, MNA  
 Q.C. Sample Type: N/A MS/MSD Duplicate Duplicate Sample ID: N/A  
 Q.C. Parameters: N/A

Trash picked up? ☒

Well locked? ☒

SIGNED/SAMPLER:

*[Signature]*

# Monitoring Well

Field Data Sheet - OMC Groundwater Site

Well Number: **W-5** Field Crew: **K'ma** Purpose of Sampling: **OMC Quarterly Sampling**  
 Site: **OMC** Field Conditions: **80°F Sunny**

## WELL CONDITION

Well Pad	Acceptable	Not Acceptable	Explain:
Protective Casing	Acceptable	Not Acceptable	Explain:
Well Casing	Acceptable	Not Acceptable	Explain:
Locking Cap	Acceptable	Not Acceptable	Explain:
Well Label (outside)	Acceptable	Not Acceptable	Explain:
Well Label (inside)	Acceptable	Not Acceptable	Explain:
J-Plug	Acceptable	Not Acceptable	Explain: <b>no plug</b>

## PURGE METHOD

Date: **6/4/2020** Time: **0815** Method: **low-flow**  
 Total Well Depth (ft) = **35.05**  
 Depth to Water (ft): = **5.41**  
 Water Column (ft): = **29.64** **4.7**  
 Comments: 1 volume

## OBSERVATIONS

Odor: **None**, Low, High, H<sub>2</sub>S, Fuel Like, Other:

Comments:

## FIELD PARAMETERS

Time	Volume (gal)	Rate (mL/min)	pH (s.u.)	DO (mg/L)	ORP (mV)	Specific Conductance (mS/cm)	Temp (°C)	Turbidity (NTU)	Depth to water (feet)
	--	--	+/- 0.1 s.u.	+/- 10%	+/- 10 mV	+/- 3%	+/- 3%	<10 NTU	--
0825		300	6.88	6.9	236.4	1.391	12.57	0.2	5.55
0830		300	7.08	5.2	220.6	1.409	13.05	0	5.55
0835		300	7.16	0.49	212.6	1.409	12.93	0	5.55
0840		300	7.18	0.49	211.1	1.410	13.05	0	5.55
0845		300	7.21	0.46	207.4	1.407	12.93	0	5.55
0850		300	7.25	0.45	202.3	1.407	13.06	0	5.55
855		300	7.25	0.43	193.4	1.407	13.03	0	5.55
0900	~4 gal	300	7.29	0.43	193.0	1.403	12.88	0	5.55
0905									
Sampled @ 0910 + 0915 (FB) (A)									
(R)									

## SAMPLING

Date: **3/6/44 6/4/2020** Time: **0910 + 0915 (FB) (A)**  
 Sample ID: **OMC-W-5** Method of Sample Collection: **(R)**  
 Analytical Parameters: **VOC, dissolved metals, MNA**  
 Q.C. Sample Type: **MS/MSD** Duplicate Sample ID: **OMC-W-5-R**  
 Q.C. Parameters: **SAA**

Trash picked up? **Y** Well locked? **Y**

SIGNED/SAMPLER: **[Signature]**

## Attachment 2

### Data Usability Evaluation

# Data Usability Evaluation—June 2020

## OMC Plant 2 Site (OU4), Waukegan, Illinois

### WA No. 237-RARA-0528, Contract No. EP-S5-06-01

PREPARED FOR: U.S. Environmental Protection Agency (EPA)

PREPARED BY: Nichole Boyea/CH2M HILL, Inc. (CH2M)

DATE: August 7, 2020

This memorandum presents the results of the data usability evaluation of groundwater data from the Outboard Marine Corporation (OMC) Plant 2 Site in Waukegan, Illinois. Groundwater samples were collected June 1 through 4, 2020, and analyzed by either the subcontract laboratory, Katahdin Analytical, or a laboratory in EPA's Contract Laboratory Program (CLP). The analytical results will be used to evaluate the performance of the in situ treatment of the remaining high-concentration source areas and the sitewide monitored natural attenuation remedy.

- A total of 84 aqueous samples, including quality assurance (QA)/quality control (QC) samples (7 field duplicates [FDs], 4 matrix spikes [MSs], 4 matrix spike duplicates [MSDs], 4 trip blanks [TBs], 1 equipment blank [EB], and 1 field blank [FB]), was analyzed for volatile organic compounds (VOCs).
- A total of 76 aqueous samples, including QA/QC samples (7 FDs, 4 MS/Duplicate, 1 EB, and 1 FB) was analyzed for dissolved metals.
- A total of 27 aqueous samples, including QA/QC samples (2FDs, 2 MSs, 2 MSDs, 1 EB, and 1 FB) was analyzed for PCB Aroclors.
- A total of 80 samples was analyzed for monitored natural attenuation (MNA) parameters (alkalinity, anions [chloride, nitrate, nitrite, sulfate], sulfide, dissolved gases [methane, ethane, ethene], and total organic carbon [TOC]), including QA/QC samples (7 FDs, 4 MSs, 4 MSDs, 1 EB, and 1 FB).

Table 1 lists the parameters, methods, and the laboratory performing the analysis.

**Table 1. Analytical Parameters**

*Data Usability Evaluation—June 2020*

*OMC Plant 2 Site (OU4), Waukegan, Illinois*

Parameter Class	Method	Laboratory Type	Laboratory
VOCs	CLP SOW SOM02.4	CLP Lab	ChemTech Consulting Group Mountainside, New Jersey
PCB Aroclors	CLP SOW SOM02.4	CLP Lab	
Dissolved Metals (Arsenic, Iron, Manganese)	CLP SOW ISM02.4	CLP Lab	
Alkalinity	SM 2320B	Subcontract Lab	Katahdin Analytical Services Scarborough, Maine
Anions (Chloride, Nitrate, Nitrite, Sulfate)	EPA 300.0, EPA 325.2, EPA 353.2, EPA 375.4	Subcontract Lab	
Sulfide	SW 846 9034	Subcontract Lab	
Dissolved Gases (Methane, Ethane, Ethene)	RSK175	Subcontract Lab	
TOC*	SW846 9060	Subcontract Lab	Katahdin Analytical Services Scarborough, Maine and Eurofins TestAmerica, Savannah, Georgia*

\*Select TOC samples were analyzed by a Katahdin subcontracted laboratory (Eurofins TestAmerica) due to a temporary instrument malfunction.

As part of the QA process outlined in the site-specific quality assurance project plan (QAPP) (CH2M 2013), QAPP Addendum II (CH2M 2017), and QAPP Addendum III (CH2M 2019), QC samples were collected in the field to complement the assessment of overall data quality and usability. The QC samples consisted of FDs, aliquots for laboratory MS/MSD, FB, EB, and VOC TB samples. Table 2 presents the sample delivery groups (SDGs), sample identifications (IDs), and station locations.

**Table 2. Sample Identification**

*Data Usability Evaluation—June 2020*

*OMC Plant 2 Site (OU4), Waukegan, Illinois*

Well ID	CLP Organics			CLP Inorganics		Subcontract MNA		
	CLP #	VOC SDG	PCB SDG	CLP #	Metals SDG	SAS #	MNA SDG	TOC SDG
OMC-MW-11D	ETTP6	ETTP6	-	METTP6	METTP6	20CO03-01	SN4244	SN4244
OMC-MW-11D-R	ETTP7	ETTP6	-	METTP7	METTP6	20CO03-02	SN4244	SN4244
OMC-MW-11S	ETTP0	ETTP6	-	METTP0	METTP6	20CO03-05	SN4244	SN4244
OMC-MW-3D	ETTP9	ETTP6	ETTP9	METTP9	METTP6	20CO03-04	SN4244	SN4244
OMC-MW-3S	ETTP1	ETTP6	-	METTP1	METTP6	20CO03-06	SN4244	SN4244
OMC-MW-501D	ETTP2	ETTP9	ETTP9	METTP2	METTP2	20CO03-07	SN4356	SN4356
OMC-MW-501S	ETTP3	ETTP9	ETTP9	METTP3	METTP2	20CO03-08	SN4356	SN4356
OMC-MW-513D	ETTP4	ETTP6	-	METTP4	METTP6	20CO03-09	SN4244	SN4244
OMC-MW-513S	ETTP5	ETTP6	-	METTP5	METTP6	20CO03-10	SN4244	SN4244
OMC-MW-516D	ETTP8	ETTP6	-	METTP8	METTP6	20CO03-03	SN4356	J185570
OMC-MW-516S	ETTP6	ETTP6	-	METTP6	METTP6	20CO03-11	SN4356	SN4356
OMC-MW-528D	ETTP7	ETTP6	-	METTP7	METTP6	20CO03-12	SN4356	SN4356
OMC-MW-528S	ETTP8	ETTP6	-	METTP8	METTP6	20CO03-13	SN4244	SN4244
OMC-MW-600D	ETTP9	ETTP6	-	METTP9	METTP6	20CO03-14	SN4244	SN4244
OMC-MW-600S	ETTP0	ETTP6	-	METTP0	METTP6	20CO03-15	SN4244	J185565
OMC-MW-601D	ETTP1	ETTP9	-	METTP1	METTP2	20CO03-16	SN4416	SN4416
OMC-MW-601S	ETTP2	ETTP9	-	METTP2	METTP2	20CO03-17	SN4416	SN4416
OMC-MW-602D	ETTP3	ETTP9	-	METTP3	METTP2	20CO03-18	SN4356	SN4356
OMC-MW-602D-R	ETTP4	ETTP9	-	METTP4	METTP2	20CO03-19	SN4356	SN4356
OMC-MW-602S	ETTP5	ETTP6	-	METTP5	METTP6	20CO03-20	SN4285	SN4285
OMC-MW-603D	ETTP6	ETTP6	-	METTP6	METTP6	20CO03-21	SN4244	J185565
OMC-MW-603S	ETTP7	ETTP6	-	METTP7	METTP6	20CO03-22	SN4244	J185565
OMC-MW-604D	ETTP8	ETTP8	-	METTP8	METTP6	20CO03-23	SN4285	SN4285
OMC-MW-604S	ETTP9	ETTP9	-	METTP9	METTP9	20CO03-24	SN4285	SN4285
OMC-MW-605D	ETTP0	ETTP8	-	METTP0	METTP9	20CO03-25	SN4356	SN4356
OMC-MW-605D-R	ETTP1	ETTP8	-	METTP1	METTP9	20CO03-26	SN4356	SN4356
OMC-MW-605S	ETTP2	ETTP8	-	METTP2	METTP9	20CO03-27	SN4356	SN4356
OMC-MW-606D	ETTP3	ETTP9	-	METTP3	METTP2	20CO03-28	SN4416	SN4416
OMC-MW-606S	ETTP4	ETTP9	-	METTP4	METTP2	20CO03-29	SN4416	SN4416
OMC-MW-607D	ETTP5	ETTP5	-	METTP5	METTP2	20CO03-30	SN4416	SN4416



**Table 2. Sample Identification**  
*Data Usability Evaluation—June 2020*  
*OMC Plant 2 Site (OU4), Waukegan, Illinois*

Well ID	CLP Organics			CLP Inorganics		Subcontract MNA		
	CLP #	VOC SDG	PCB SDG	CLP #	Metals SDG	SAS #	MNA SDG	TOC SDG
OMC-MW-607S	ETTS6	ETTR9	-	METTS6	METTQ2	20CO03-31	SN4356	SN4356
OMC-MW-610D	ETTS7	ETTR8	ETTP9	METTS7	METTR9	20CO03-32	SN4285	SN4285
OMC-MW-610S	ETTS8	ETTR8	ETTP9	METTS8	METTR9	20CO03-33	SN4285	SN4285
OMC-MW-612D	ETTS9	ETTR9	-	METTS9	METTQ2	20CO03-34	SN4356	SN4356
OMC-MW-612S	ETTT0	ETTR8	-	METTT0	METTR9	20CO03-35	SN4356	SN4356
OMC-MW-612S-R	ETTT1	ETTR8	-	METTT1	METTR9	20CO03-36	SN4356	SN4356
OMC-MW-613D	ETTT2	ETTR9	ETTP9	METTT2	METTQ2	20CO03-37	SN4356	SN4356
OMC-MW-613S	ETTT3	ETTR9	-	METTT3	METTQ2	20CO03-38	SN4356	SN4356
OMC-MW-614D	ETTT4	ETTR9	-	METTT4	METTQ2	20CO03-39	SN4356	SN4356
OMC-MW-614S	ETTT5	ETTR9	-	METTT5	METTR9	20CO03-40	SN4356	SN4356
OMC-MW-615D	ETTT6	ETTP6	-	METTT6	METTP6	20CO03-41	SN4244	J185565
OMC-MW-615S	ETTT7	ETTP6	-	METTT7	METTP6	20CO03-42	SN4244	J185565
OMC-MW-619D	ETTT8	ETTR8	-	METTT8	METTR9	20CO03-43	SN4356	SN4356
OMC-MW-619S	ETTT9	ETTR8	-	METTT9	METTR9	20CO03-45	SN4356	SN4356
OMC-MW-620D	ETTW0	ETTS5	-	METTW0	METTQ2	20CO03-46	SN4416	SN4416
OMC-MW-620S	ETTW1	ETTS5	-	METTW1	METTQ2	20CO03-47	SN4416	SN4416
OMC-MW-621D	ETTW2	ETTS5	-	METTW2	METTW2	20CO03-48	SN4416	SN4416
OMC-MW-621S	ETTW3	ETTS5	-	METTW3	METTW2	20CO03-49	SN4416	SN4416
OMC-MW-621S-R	ETTW4	ETTS5	-	METTW4	METTW2	20CO03-50	SN4416	SN4416
OMC-MW-623D	ETTW5	ETTR8	ETTP9	METTW5	METTR9	20CO03-51	SN4356	SN4356
OMC-MW-623S	ETTW6	ETTS5	ETTW6	METTW6	METTW2	20CO03-52	SN4416	SN4416
OMC-MW-624D	ETTX8	ETTS5	ETTW6	METTX8	METTW2	20CO03-53	SN4416	SN4416
OMC-MW-624S	ETTW7	ETTS5	ETTW6	METTW7	METTW2	20CO03-54	SN4416	SN4416
OMC-MW-625D	ETTY2	ETTR8	-	METTY2	METTR9	20CO03-68	SN4285	SN4285
OMC-MW-625S	ETTY3	ETTR8	-	METTY3	METTR9	20CO03-69	SN4285	SN4285
OMC-MW-626D	ETTY4	ETTS5	-	METTY4	METTW2	20CO03-70	SN4416	SN4416
OMC-MW-626S	ETTY5	ETTR9	-	METTY5	METTQ2	20CO03-71	SN4356	SN4356
OMC-ST-MW-1D	ETTX9	ETTR8	ETTP9	METTX9	METTR9	20CO03-57	SN4285	SN4285
OMC-ST-MW-1S	ETTX0	ETTR8	ETTP9	METTX0	METTR9	20CO03-58	SN4285	SN4285
OMC-ST-MW-1S-R	ETTX1	ETTR8	ETTP9	METTX1	METTR9	20CO03-59	SN4285	SN4285
OMC-ST-MW-2D	ETTX2	ETTR8	ETTP9	METTX2	METTR9	20CO03-60	SN4356	SN4356
OMC-ST-MW-2S	ETTX3	ETTP6	ETTP9	METTX3	METTP6	20CO03-61	SN4285	SN4285
OMC-ST-MW-3D	ETTX4	ETTR8	ETTP9	METTX4	METTR9	20CO03-62	SN4356	SN4356
OMC-ST-MW-3S	ETTX5	ETTR8	ETTP9	METTX5	METTR9	20CO03-63	SN4356	SN4356
OMC-ST-MW-4D	ETTX6	ETTR9	ETTP9	METTX6	METTQ2	20CO03-64	SN4356	SN4356

**Table 2. Sample Identification**

*Data Usability Evaluation—June 2020*

*OMC Plant 2 Site (OU4), Waukegan, Illinois*

Well ID	CLP Organics			CLP Inorganics		Subcontract MNA		
	CLP #	VOC SDG	PCB SDG	CLP #	Metals SDG	SAS #	MNA SDG	TOC SDG
OMC-ST-MW-4S	ETTX7	ETTS5	ETTW6	METTX7	METTW2	20CO03-65	SN4416	SN4416
OMC-ST-MW-5D	ETTY0	ETTS5	ETTW6	METTY0	METTW2	20CO03-66	SN4416	SN4416
OMC-ST-MW-5S	ETTY1	ETTS5	ETTW6	METTY1	METTW2	20CO03-67	SN4416	SN4416
OMC-W-5	ETTW8	ETTS5	ETTW6	METTW8	METTW2	20CO03-55	SN4416	SN4416
OMC-W-5-R	ETTW9	ETTS5	ETTW6	METTW9	METTW2	20CO03-56	SN4416	SN4416
OMC-EB060320	ETTY6	ETTR9	ETTP9	METTY6	METTQ2	20CO03-72	SN4356	SN4356
OMC-FB060320	ETTY7	ETTR9	ETTP9	METTY7	METTQ2	20CO03-73	SN4356	SN4356
OMC-TB01-060120	ETTY8	ETTP6	-	-	-	-	-	-
OMC-TB02-060220	ETTY9	ETTR8	-	-	-	-	-	-
OMC-TB03-060320	ETTZO	ETTR9	-	-	-	-	-	-
OMC-TB04-060420	ETTZO	ETTS5	-	-	-	-	-	-

CLP = contract laboratory program; SAS# = service analytical sample number; SDG# = sample delivery group; VOC = volatile organic compound; PCB = polychlorinated biphenyls/Aroclors; MNA = monitored natural attenuation (alkalinity, anions, sulfide, and dissolved gases); TOC = total organic carbon

## Subcontract Laboratory Data

Alkalinity, anions (chloride, nitrate, nitrite, sulfate), sulfide, dissolved gases (methane, ethane, ethene), and total organic carbon were analyzed by Katahdin Analytical and their subcontractor TestAmerica and reported in SDGs SN4244, SN4285, SN4356, SN4416, J185565, and J185570. CH2M performed a level III review on 100 percent of the data set that included validating the data set that included 63 native samples (4 of which were designated as MS/MSD samples), 7 FD samples, 1 EB, and 1 FB, for a total of 72 field samples.

The data were reviewed to assess their analytical accuracy, precision, and completeness. The review was conducted in accordance with the site-specific QAPP (CH2M 2013). A forms review was conducted on 100 percent of the definitive data.

The forms review consisted of a review of the following QC items:

- Holding times and sample receipt conditions
- Required QC samples at the specified frequencies
- Laboratory control sample precision and accuracy
- MS/MSD precision and accuracy
- Blank contamination and, if any, its impact on the analytical results
- Initial calibration and continuing calibration precision and accuracy
- Laboratory and FD precision
- Method Reporting Limit check precision and accuracy

The QA/QC limits implemented during the data quality evaluation were those listed in the site-specific QAPP. Standard data qualifiers were added as a means of classifying the data as to their conformance to QA/QC requirements. The data qualifiers are defined as follows:

- [J] Estimated. The analyte was below the stated reporting limit, but greater than the method detection limit, or there is an analytical bias.

- [J+] Biased High. The analyte was positively identified, but the associated numerical value is approximate (metals only).
- [J-] Biased Low. The analyte was positively identified, but the associated numerical value is approximate (metals only).
- [U] Undetected. The analyte was analyzed for but not detected at a concentration equal to or greater than the laboratory reporting limit.
- [UJ] Estimated. The component was analyzed for but was not detected at a level equal to or greater than the level of detection. This flag is used when QC measurements indicate a possible low bias in the analytical data.

The analytical results were within project control limits, except where noted in the following subsections. Attachment 1 lists the validator applied qualifiers.

### Hold Time and Sample Integrity

Several samples were analyzed with improper preservation, exceedance of hold time, or other bias. These cases are outlined below:

Dissolved gas samples require preservation to a pH less than 2. Laboratory technicians reported that several samples were found to have a pH greater than 2 at the time of analysis, including 2 samples in SDG SN4285 (20CO03-23 and 20CO03-68), 4 samples in SDG SN4356 (20CO03-25, 0CO03-26, 20CO03-34, and 20CO03-60), and 3 samples in SDG SN4416 (20CO03-28, 20CO03-46, and 20CO03-48). The samples were collected in vials containing the appropriate preservative, and the laboratory presumed that the high pHs were likely a result of either matrix effect or preservative inadvertently diluted out in the field by filling the vial with excess sample material. The samples were analyzed within the standard hold time, but the improper preservation may have allowed for microbial conversion or other degradation to the sample. Therefore, CH2M validators used professional judgement to qualify results conservatively as estimated: detects “J” and nondetects “UJ”

Methane concentrations exceeded the upper calibration range in sample 20CO03-27, which was supposed to be reanalyzed. However, the sample was dropped by the laboratory analyst during dilution, and the original concentration had to be reported. There was no additional sample volume available for reanalysis. The result has been qualified as estimated “J+”.

Analysis for chloride, nitrate, nitrite, and sulfate in SDG SN4356 was originally performed via method EPA 300.0, but analysts repeatedly observed run QC and laboratory control sample (LCS) failures, poor recoveries, and unusual chromatograms. Some nitrate and nitrite results were bracketed by acceptable standards and were reported. The remaining samples were reanalyzed via conventional wet chemistry methods: chloride, nitrate, and nitrite via colorimetric methods 325.2 and 353.2, and sulfate by turbidity (method EPA 375.4). Colorimetric analysis for nitrate and nitrite was performed outside of the standard 48-hour hold time. Detected samples were qualified as estimated “J”, and nondetected results were rejected.

Due to temporary TOC instrument malfunction that required downtime for repairs, Katahdin shipped the samples to a subcontracted laboratory in attempt to conduct the analysis prior to the method hold time expired. After discussion, CH2M determined that, though hold time exceedances were inevitable, Katahdin would be the laboratory to complete analysis. However, some samples were analyzed while in custody of the subcontracted laboratory; these were analyzed within hold time and reported in SDGs J185565-1 and J185570-1 and incorporated into Katahdin’s analytical reports (SN4244 and SN4356). The TOC samples reported in SDGs SN4356 and SN4416 are those analyzed after hold time expiration. CH2M validators determined that sample integrity was not significantly impacted by the exceedance,

and results were qualified as estimated “J”. A corrective action report was submitted by the laboratory and is provided in Attachment 1.

Due to laboratory error, alkalinity in samples 20CO03-01, 20CO03-03, 20CO03-30, 20CO03-47, 20CO03-49, 20CO03-50, 20CO03-56, 20CO03-65, and 20CO03-66 were analyzed outside of the standard 14-day hold time. CH2M validators determined that sample integrity was not significantly compromised due to this exceedance, and the results were qualified as estimated “J”. A corrective action report was submitted by the laboratory and is provided in Attachment 1.

TOC in sample 20CO03-23 was analyzed 2 days outside the standard 28-day hold time. CH2M validators determined that the sample integrity was not significantly compromised due to this exceedance, and the result was qualified as estimated “J”.

Chloride and sulfate results in sample 20CO03-57 exceeded the upper calibration range of the instrument, and the run was contaminated by sulfate. However, the remaining sample volume was consumed for alkalinity analysis, and the sample could not be re-analyzed. Results were qualified as estimate biased high “J+”.

### Blank Samples

Field and laboratory blank samples were analyzed at required frequencies. However, there were several instances of target analyte detections in blanks. Qualification of associated samples was determined as follows:

In cases where an analyte was detected below the reporting limit (RL) in a blank and the associated project sample results exceeded 5 times the blank concentration, no qualification was required. In cases where an analyte was detected below the RL in a blank and the associated project sample results were detected below the RL or at concentrations less than 5 times the blank concentration, the analyte was qualified as nondetect “U”; the result value was either elevated to the RL or, in cases where the original result was above the RL, reported at the original value.

#### *Method Blanks*

- SDG SN4244:
  - Nitrate was qualified nondetect “U”, and result values were elevated to the RL in samples 20CO03-01, 20CO03-09, and 20CO03-14.
  - Nitrate was qualified nondetect “U” and reported at the original result values in samples 20CO03-04, 20CO03-05, 20CO03-06, 20CO03-10, and 20CO03-42.
  - TOC was qualified nondetect “U” and reported at the original result values in samples 20CO03-06 and 20CO03-13.
- SDG SN4356:
  - Nitrate was qualified nondetect “U” and reported at the original result value in sample 20CO03-07.
  - Sulfate was qualified nondetect “U”, and the result value was elevated to the RL in sample 20CO03-03.

### *Field Blanks*

The FB (20CO03-73) had concentrations of alkalinity, methane, sulfate, and TOC detected below the RL, and chloride detected above the RL. This blank is associated with samples collected June 3, 2020.

- SDG SN4285:
  - Chloride was qualified nondetect “U” and reported at the original result values in samples 20CO03-20, 20CO03-69, 20CO03-58, and 20CO03-59.
  - Chloride was qualified nondetect “U” and reported at the original result values in samples 20CO03-08, 20CO03-17, 20CO03-31, 20CO03-38, 20CO03-40, 20CO03-45, 20CO03-47, 20CO03-52, and 20CO03-54.

### *Equipment Blanks*

The EB (20CO03-72) had concentrations of alkalinity, methane, sulfide, and TOC detected below the RL, and sulfate detected above the RL. This blank is associated with all samples collected.

- SDG SN4244:
  - Methane was qualified nondetect “U”, and result values were elevated to the RL in samples 20CO03-05 and 20CO03-41.
- SDG SN4285:
  - Sulfate was qualified as nondetect “U”, and the result value was elevated to the RL in sample 20CO03-24.
  - Sulfide was qualified as nondetect “U”, and result values were elevated to the RL in samples 20CO03-33 and 20CO03-57.
  - Methane was qualified as nondetect “U”, and the result value was elevated to the RL in sample 20CO03-33.
- SDG SN4356:
  - Sulfate was qualified nondetect “U”, and the result value was elevated to the RL in sample 20CO03-03.
  - Sulfate was qualified nondetect “U”, and reported at the original sample result value in sample 20CO03-08.
  - Sulfide was qualified nondetect “U”, and result values were elevated to the RL in samples 20CO03-03, 20CO03-39, and 20CO03-63.
  - Sulfide was qualified nondetect “U” and reported at the original sample result values in samples 20CO03-18, 20CO03-35, 20CO03-36, 20CO03-43, 20CO03-45, and 20CO03-64.
  - Methane was qualified nondetect “U”, and the result value was elevated to the RL in sample 20CO03-12.
- SDG SN4416:
  - Sulfide was qualified nondetect “U”, and the result values were elevated to the RL in samples 20CO03-54, 20CO03-67, and 20CO03-55.
  - Sulfide was qualified nondetect “U” and reported at the original sample result values in samples 20CO03-29, 20CO03-52, and 20CO03-70.

## Matrix Spike/Matrix Spike Duplicate

MSs and MSDs were analyzed at the appropriate frequency of 1 per 20 samples, and generally accuracy and precision criteria were met, with the following exceptions:

- In SDG SN4356, MS and MSD samples were run using parent sample 20CO03-03.
  - Chloride recovered below the lower control limit (LCL) in both the MS and MSD. The parent sample concentrations exceeded 4 times the spike concentration; no qualification was required.
  - Methane recovered below the LCL in the MS sample. The parent sample concentrations exceeded 4 times the spike concentration; no qualification was required.
  - Sulfate recovered below the LCL in both MS and MSD. The parent sample was qualified as estimated biased low “J-”.
  - Nitrate recovered below the LCL in the MS. The recovery was within National Functional Guidelines (NFG; EPA 2016) criteria, and CH2M validators used professional judgment to qualify based on the more conservative laboratory criteria. Nitrate was nondetect in the parent sample, and the result was qualified as estimated nondetect “UJ”.
- In SDG SN4356, MS and MSD samples were run using parent sample 20CO03-60.
  - Nitrite’s recovery exceeded the upper control limit (UCL) in both the MS and MSD. Nitrite was qualified as estimated biased high “J+” in the parent sample.
  - Methane’s recovery exceeded the UCL in both the MS and MSD. The concentrations in the parent sample were greater than 4 times the spike concentration for methane; no qualification was required.
  - Chloride recovered below the LCL in the MS, and the parent sample was qualified as estimate biased low “J-”.
  - Sulfate recovered was below the LCL in the MSD sample, but as parent concentrations exceeded 4 times the spike, no qualification was required.
- In SDG SN4416, MS and MSD samples were run using parent sample 20CO03-17.
  - Methane recovered below LCL in the MS and above the UCL in the MSD. Methane concentrations in the parent sample were greater than 4 times the spike, and no qualification was required.
  - Sulfate recovered below the LCL in both MS and MSD, and was qualified as estimate biased low “J-” in the parent sample.
  - Nitrite’s recovery exceeded the UCL in both MS and MSD, and was qualified as estimate biased high “J+” in the parent sample.
- In SDG SN4416, MS and MSD samples were run using parent sample 20CO03-67.
  - Methane, ethane, chloride, and sulfate had recoveries below the LCL in both the MS and MSD samples. Methane concentrations in the parent sample were greater than 4 times the spike, and no qualification was required. Ethane was nondetect in the parent sample and was qualified as estimated nondetect “UJ”. Chloride and sulfate were qualified as estimated biased low “J-” in the parent sample.
  - Nitrite’s recovery exceeded the UCL in both MS and MSD samples and the parent sample was qualified as estimate biased high “J+”.



## Field Duplicates

A total of 7 FD samples were collected for analysis, meeting the minimum frequency of 1 per 10 field samples. FD samples were collected immediately following the parent sample and analyzed for the same parameters. The precision criteria, a relative percent difference (RPD) of less than 30 percent, was met with the following exceptions:

- In SDG SN4416, the RPD for chloride and sulfate exceeded criteria in parent sample 20CO03-49 and duplicate sample 20CO03-50. Chloride and sulfate were detected in both parent and duplicate and were qualified as estimated “J”.

## Laboratory Control Sample

LCSs were analyzed as required by the laboratory and generally, criteria were met, with the following exception:

- SDG SN4285:
  - Sulfide’s recovery exceeded the laboratory UCL in LCS WG279535-2. Though the recovery was within NFG criteria, CH2M validators used professional judgment to implement the more stringent laboratory criteria. Sulfide was qualified as estimate biased high “J+” in the associated sample, 20CO03-57.

## Contract Laboratory Program Data

The samples were analyzed for VOCs by a laboratory in EPA’s CLP. EPA’s Environmental Service Assistance Team (ESAT) contractor, Techlaw, reviewed the data set from the laboratory to assess the accuracy and precision of the method and the matrix using criteria established in the NFG (EPA 2017) and verified that the data set was complete. ESAT validators also added data qualifiers when the QC statistics indicated a possible bias to specific compounds or analytes associated with a particular method and sample batch.

Standard data qualifiers are a means to classify the data with regard to their conformance to QC requirements. The applied data qualifiers are defined as follows:

- [U] The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- [J] The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- [J+] The result is an estimated quantity; the results may be biased high.
- [J-] The result is an estimated quantity; the results may be biased low.
- [UJ] The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the action limit of quantitation necessary to accurately and to precisely measure the analyte in the sample.
- [R] The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.

CH2M reviewed the validation performed by Techlaw for the groundwater samples in Case Number 48662. The data were reported in the following SDGs: ETP6, ETTR8, ETTR9, and ETS5 are associated with VOC analysis, ETP9 and ETTW6 are associated with PCB Aroclor analysis, and METTP6, METTQ2, METTR9, and METTW2 are associated with dissolved metals. The VOC and dissolved metals data set includes 63 native samples (of which 4 were designated MS/MSD samples), 7 FD samples, 1 FB, and 1 EB, and 2 VOC TBs, for a total of 74 and 72 field samples, respectively. The PCB Aroclor data set

included 22 native samples (2 of which were designated as MS/MSD samples), 2 FDs, 1 FD, and 1 EB, for a total of 26 samples.

The EPA validation case narrative worksheets indicate that some sample results should be qualified as estimated based on the applicable QC statistics or other NFG requirements. Attachment 2 lists the CH2M validator applied qualifiers. Attachment 3 contains the ESAT narratives and worksheets.

## Validation of Field Quality Control Samples

EPA's ESAT validators, Techlaw, reviewed field QC samples, including FB and EB samples, and FDs, but did not qualify results. CH2M validators reviewed the aforementioned field QC samples and VOC TB samples in accordance with the QAPP. QC criteria were generally met, except where outlined in the following subsections.

### Blanks

Blank samples were analyzed at required frequencies, including 1 EB, 1 FB, and 4 TBs. Field and laboratory blank samples were analyzed at required frequencies. However, there were several instances of target analyte detections in blanks. Qualification of associated samples was determined as follows:

In cases where an analyte was detected below the RL in a blank and the associated project sample results exceeded 5 times the blank concentration, no qualification was required. In cases where an analyte was detected below the RL in a blank and the associated project sample results were detected below the RL or at concentrations less than 5 times the blank concentration, the analyte was qualified as nondetect "U"; the result value was either elevated to the RL or, in cases where the original result was above the RL, reported at the original value.

- TB ETTY8; associated with VOC samples shipped June 1, 2020.
  - Acetone was qualified nondetect "U", and result values were elevated to the RL per NFG criteria in samples ETPP6, ETPP7, and ETTQ9.
- TB ETTY9; associated with samples shipped June 2, 2020.
  - Acetone was qualified nondetect "U", and at the result values were elevated to the RL per NFG criteria in samples ETPP8, ETTT7, ETTT0, and ETTX0.
- TB ETTZ0; associated with samples shipped June 3, 2020.
  - Toluene was qualified nondetect "U", and the result value was elevated to the RL per NFG criteria in sample ETTT4.
- EB ETTY6; associated with all samples collected during this event.
  - Acetone was qualified nondetect "U", and result values were elevated to the RL per NFG criteria in samples ETPP6, ETPP7, ETPP8, ETTQ9, ETTT0, ETTT7, ETTT8, ETTX0, ETTX2, ETTT1, ETTT3, ETTT4, and ETTT4.
- FB ETTY7; associated with all samples collected June 3, 2020.
  - Acetone was qualified nondetect "U", and result values were elevated to the RL per NFG criteria in samples ETTT8, ETTX2, ETTT3, ETTT4, ETTT9, and ETTT4.

### Field Duplicate Samples

A total of 4 FD samples was collected for VOC and dissolved metals analysis, and 2 were analyzed for PCB Aroclor analysis, meeting the minimum frequency of 1 per 10 field samples. FD samples were collected immediately following the parent sample and analyzed for the same parameters. The precision

criteria, a relative percent difference (RPD) of less than 30 percent, was met for all with the following exception:

- Methyl acetate exceeded RPD criteria in parent sample ETTR3 and duplicate ETTR4. Methyl acetate was detected in both samples and qualified estimated “J”.

## Findings

The following subsections summarize the data validation findings and usability of the final reportable results. The sample numbers and locations do not include QA/QC samples.

### Volatile Organic Compound Data

The VOC data set consists of the results for 51 analytes for each of the 63 monitoring well samples, excluding QA/QC samples, for a total of 3,213 results.

The data validation summary indicates the following:

- J, J-, J+, U, and UJ qualifiers were applied to sample results that were potentially affected by QC deficiencies.
- J qualifiers were applied to sample results that were reported between the MDL and RL.
- Nondetect sample results were qualified U.
- None of the reported VOC data was rejected.

Though the evaluation of blanks and other QA/QC data indicates possible estimate values, the accuracy and precision are generally acceptable, and the data set completeness is deemed as 100 percent usable and may be used in the project decision-making process with qualification.

### Polychlorinated Biphenyl Aroclor Data

The PCB Aroclor data set consists of the results for 9 Aroclors for 21 monitoring well samples, excluding QA/QC samples, creating 180 results.

The validation of the PCB Aroclor data indicates the following:

- J and J+ qualifiers were applied to sample results that were potentially affected by QC deficiencies.
- J qualifiers were applied to sample results that were reported between the MDL and RL.
- Nondetect sample results were qualified U.
- None of the reported PCB Aroclor data was rejected.

Though the evaluation of QA/QC data indicates possible estimate values, the accuracy and precision are generally acceptable, and the data set completeness is deemed as 100 percent usable and may be used in the project decision-making process with qualification.

### Dissolved Metals Data

The metals data set consists of the results for 3 analytes for each of the 63 monitoring well sample, excluding QA/QC samples, for a total of 189 results. The validation summary of the metals data set indicates the following:

- J, J+, U, and UJ qualifiers were applied to sample results that were potentially affected by QC deficiencies.
- J qualifiers were applied to sample results that were reported between the MDL and RL.
- Nondetect sample results were qualified U.
- None of the reported dissolved metals data was rejected.

Though the evaluation of QA/QC data indicates possible estimate values, the accuracy and precision are generally acceptable, and the data set completeness is deemed as 100 percent usable and may be used in the project decision-making process with qualification.

### Alkalinity Data

The alkalinity data set consists of 1 result for 63 monitoring well samples, excluding QA/QC. The validation summary of the alkalinity data indicates the following:

- J qualifiers were applied to sample results that were affected by hold time exceedances.
- J qualifiers were applied to sample results that were reported between the MDL and RL.
- Nondetect sample results were qualified U.
- None of the reported alkalinity data was rejected.

Though several samples were analyzed outside of hold time, the accuracy and precision are generally acceptable, and the data set completeness is deemed as 100 percent usable and may be used in the project decision-making process with qualification.

### Anions Data

The anions data set consists of 4 results (chloride, nitrate, nitrite, sulfate) for 63 monitoring well samples, excluding QA/QC samples, for a total of 252 results. The validation summary of the anions data indicates the following:

- J, J-, J+, U, and UJ qualifiers were applied to sample results that were potentially affected by QC deficiencies.
- J qualifiers were applied to sample results that were reported between the MDL and RL.
- Nondetected sample results were qualified U.
- Due to temporary equipment failure, 18 nitrate and nitrite samples were analyzed outside of hold time. Detects were qualified J, and nondetects were rejected. 31 total results were rejected.

For anions, 88 percent of the data, as qualified, can be used to make project decisions.

### Sulfide Data

The sulfide data set consists of 1 result for 63 monitoring well samples, excluding QA/QC samples. The validation of the sulfide data indicates the following:

- U qualifiers were applied to sample results that were potentially affected by blank deficiencies.
- J qualifiers were applied to sample results that were reported between the MDL and RL.
- Nondetected sample results were qualified U.
- None of the sulfide data was rejected.

Though the evaluation of blanks data indicates possible estimate values, the accuracy and precision are generally acceptable, and the data set completeness is deemed as 100 percent usable and may be used in the project decision-making process with qualification.

## Dissolved Gases Data

The dissolved gases data set consists of 3 results (methane, ethane, ethene) for 63 monitoring well samples, excluding QA/QC samples, for a total of 189 results. The validation of the dissolved gases data indicates the following:

- J, J+, U, and UJ qualifiers were applied to sample results that were potentially affected by QC deficiencies.
- J qualifiers were applied to sample results that were reported between the MDL and RL.
- Nondetected sample results were qualified U.
- Several samples were found to be improperly preserved at time of analysis with pH greater than 2. Samples were qualified as estimated J for potential sample integrity impacts.
- None of the dissolved gases data was rejected.

Though the evaluation of QA/QC data and considering possible effects caused by improper preservation, the data set contains possible estimate values. However, the accuracy and precision are generally acceptable, and the data set completeness is deemed as 100 percent usable and may be used in the project decision-making process with qualification.

## Total Organic Carbon Data

TOC data set consists of 1 TOC result for 63 monitoring well samples, excluding QA/QC samples. The validation summary of the TOC data indicates the following:

- The evaluation of blanks data indicates possible bias due to applicable QC statistics. U qualifiers were applied to sample results potentially affected by QC deficiencies.
- J qualifiers were applied to sample results that were reported between the MDL and RL.
- Due to temporary instrument failure, 28 TOC samples were analyzed outside of hold time. These results were qualified J.
- Nondetected sample results were qualified U.
- None of the reported TOC results were rejected.

For TOC, 100 percent of the data, as qualified, can be used to make project decisions.

## Overall Assessment

The final activity in the data quality evaluation is an assessment of whether the data meet the data quality objectives. The goal of the assessment was to demonstrate that a sufficient number of representative samples were collected, and the resulting analytical data can be used to support the decision-making process. The following summary highlights the data evaluation findings for the above-defined events:

- The precision and accuracy of the data, as measured by field and laboratory QC indicators, indicate that the data quality objectives were met.
- Some alkalinity, anions, and TOC samples were analyzed outside of hold time. No alkalinity or TOC results were rejected, and 100 percent of this data can be considered usable as qualified. Thirty-one anions results were rejected, and 88 percent of anions data can be considered usable as qualified.
- The integrity of dissolved gases results for some samples could have been affected by improper preservation (pH greater than 2). No data was rejected due to these deficiencies, but results are qualified as estimated. One-hundred percent of the data can be considered usable as qualified.
- The completeness objective of 90 percent was not met for anions.

## References Cited

CH2M HILL (CH2M). 2013. *Quality Assurance Project Plan, Revision 2, OMC Plant 2 Site, Waukegan, Illinois*. WA No. 105-RARA-0528, Contract No. EP-S5-06-01. March.

CH2M HILL (CH2M). 2017. *Quality Assurance Project Plan Addendum II Letter, OMC Plant 2 Site, Waukegan, Illinois*. WA No. 237-RARA-528, Contract No. EP-S5-06-01. October.

CH2M Hill (CH2M). 2019. *Quality Assurance Project Plan Addendum III Letter, OMC Plant 2 Site, Waukegan, Illinois*. WA No. 237-RARA-528, Contract No. EP-S5-06-01. February

U.S. Environmental Protection Agency (EPA). 2016. *National Functional Guidelines for Superfund Organic Methods Data Review*. EPA-540-R-2016-002. September.

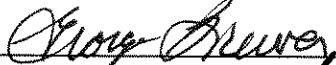



Attachment 1  
Katahdin Corrective Actions Reports  
(CARs)

**KATAHDIN ANALYTICAL SERVICES, LLC. – CORRECTIVE ACTION REPORT**

<b>Problem Identification</b> (Person initiating CAR)		Name: Leslie Dimond	Date: 08/10/2020
Discovered by Laboratory		X Discovered by Client (Complaint)	Other
<p>The analytical holding time was exceeded for the following samples:</p> <p>SN4244-1, the holding time expired 6/15, the sample was analyzed 8 days outside of the holding time.</p> <p>SN4356-1, the holding time expired 6/16, the sample was analyzed 4 days outside of the holding time.</p> <p>SN4416-7, 8, 9, 10, 12, 14 and 15, the holding time expired 6/18, the sample was analyzed 5 days outside of the holding time.</p>			
Team:	Facilitator: Leslie Dimond Lead: Leslie Dimond Members: George Brewer and Zach Fuller		
<b>Root Cause Investigation &amp; Determination</b> (To be completed by Department Manager, Operations Manager and/or QA Officer)			
Review the 6 "M's" below and investigate to determine whether one of them, or more than one, could be the cause of the problem.			
Possible Causes	Details		
Machine (Instrument, PC, Software, Support Equipment, Maintenance)	Alkalinity is analyzed on the Autotitrator. This instrument was functioning properly at the time these samples were in house.		
Method (Process, SOPs, Informal procedures, Activities, Customs, Habits, Culture)	<p>Each wet chemistry parameter has an analyst assigned to it. They are responsible for keeping track of the analytical holding time and ensuring analysis is performed within the holding time. If an analysis gets overburdened with sample load; it is the analyst's responsibility to communicate this to the Department Supervisor or the Department Manager.</p> <p>Additionally, when a nonconformance occurs, a nonconformance report should be completed. This is then given to the Project Manager so they can contact the client. The client may decide to cancel the analysis or give the approval to report the results with narration of the nonconformance. A nonconformance report was not completed for these samples, therefore the client was never notified.</p>		
Materials (Samples, Consumables, Standards, Gases)	The Wet Chemistry analysts print a daily worklist from our LIMS. The work list is organized by method, then work order number. It also lists the collection date, due date, holding time and number of days into the holding time. Any sample with less than 4 days left of holding time is emboldened.		
Metrics (Analyte lists, QC Limits, Reporting Limits, Trends in NCRs)	The alkalinity sample load was high at the time of the missed holding times but was manageable.		
Man (Activities, Capabilities, Communication, Training)	The analyst who was responsible for alkalinity analysis is no longer with Katahdin so we can not determine why the holding time exceedance occurred. His last day of employment was June 19 <sup>th</sup> which was after the hold time for these samples expired but before the samples were reanalyzed. Poor communication within the department is the cause of this nonconformance.		
Mother Nature (Climate, Accidents, Power issues)	Not Applicable		

**KATAHDIN ANALYTICAL SERVICES, LLC. – CORRECTIVE ACTION REPORT**

<b>Corrective Action Plan:</b>	Name: Leslie Dimond	Date: 08/10/2020
<p>It was customary for the Wet Chemistry group to gather every morning for a brief meeting to determine what analysts were working on that day, if a specific analysis was overburdened with samples and needed help, and at what stage specific reports are in the reporting process. This practice had been suspended because of the pandemic and will be restarted 08/11/2020 with the appropriate safety precautions.</p> <p>All wet chemistry analysts will be reminded to complete nonconformance reports when quality control parameters are not met. The Project Manager will contact the client whenever they receive a nonconformance report.</p>		
<b>Review &amp; Approval of Corrective Action Plan</b>		
Supervisor Approval:		Date: 08/10/20
Operations Manager Approval:		Date: 8-10-2020
Quality Assurance Officer:	Leslie Dimond	Date: 081020
Analyst (or refer to signatory list):	—	Date: —

**Additional Information:**

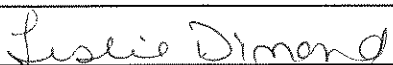


**KATAHDIN ANALYTICAL SERVICES, LLC. – CORRECTIVE ACTION REPORT**

<b>Monitoring of Corrective Action</b> (To be completed by QA Officer and/or Operations Manager): List details of follow-up			
Corrective Action Effective	Return to Control –	Yes	No
Further Monitoring Needed/Additional Corrective Action			
QA Approval:		Date:	

**KATAHDIN ANALYTICAL SERVICES, LLC. – CORRECTIVE ACTION REPORT**

<b>Problem Identification</b> (Person initiating CAR)		Name: Leslie Dimond	Date: 08/10/2020
Discovered by Laboratory		X Discovered by Client (Complaint)	Other
Katahdin subcontracted TOC samples due to an instrument malfunction without the client's consent.			
Team:	Facilitator: Leslie Dimond Lead: Leslie Dimond Members: Heather Manz, Galen Nickerson		
<b>Root Cause Investigation &amp; Determination</b> (To be completed by Department Manager, Operations Manager and/or QA Officer)			
Review the 6 "M's" below and investigate to determine whether one of them, or more than one, could be the cause of the problem.			
Possible Causes	Details		
Machine (Instrument, PC, Software, Support Equipment, Maintenance)	The TOC instrument was not functioning, parts were ordered but they did not correct the problem, more troubleshooting occurred, and more parts were ordered. The swiftness of getting it functioning again was uncertain. The aqueous TOC sample load was very high, and Katahdin was worried that we would exceed the analytical holding time for many samples. The decision was made to subcontract the samples, but the client was not contacted and did not give consent for the subcontracting.		
Method (Process, SOPs, Informal procedures, Activities, Customs, Habits, Culture)	Katahdin's SOP SD-900, Subcontracting Analyses, states, the client shall always be informed of the intent to subcontract any work. Katahdin's Quality Manual states, no work is subcontracted without consent from the client. Though it is not explicitly stated, but both statements are concerning analyses which we are not certified to perform. Client notification of subcontracting samples is explicit during the bid process. Wording must be added to both documents to clarify, clients must be notified prior to subcontracting any samples for any reason.		
Materials (Samples, Consumables, Standards, Gases)	Not Applicable		
Metrics (Analyte lists, QC Limits, Reporting Limits, Trends in NCRs)	Subcontracting samples due to instrument malfunctions is not a common occurrence at Katahdin.		
Man (Activities, Capabilities, Communication, Training)	The Project Manager typically will notify clients if we need to subcontract samples due to an instrument malfunction. The Project Manager was firstly concerned about getting the samples analyzed within holding time.		
Mother Nature (Climate, Accidents, Power issues)	Not Applicable		

**KATAHDIN ANALYTICAL SERVICES, LLC. – CORRECTIVE ACTION REPORT**

<b>Corrective Action Plan:</b>	<b>Name:</b> Leslie Dimond	<b>Date:</b> 08/12/2020
<p>Wording will be added to both SD-900 and the Quality Manual concerning client notification of subcontracting samples due to instrument malfunctions. There will be no exceptions for the requirement of notifying a client of samples being subcontracted.</p> <p>The update of SOP SD-900 will be complete by August 14 2020. The QAM update will be complete by August 21, 2020. The changes will reflect all clients.</p> <p>All Project Managers have been informed of the necessity of client consent prior to subcontracting any samples for any reason.</p>		
<b>Review &amp; Approval of Corrective Action Plan</b>		
Supervisor Approval:		Date: 08/12/20
Operations Manager Approval:		Date: 08-12-2020
Quality Assurance Officer:		Date: 08/12/20
Analyst (or refer to signatory list):	–	Date:

Additional Information:

**KATAHDIN ANALYTICAL SERVICES, LLC. – CORRECTIVE ACTION REPORT**

<b>Monitoring of Corrective Action</b> (To be completed by QA Officer and/or Operations Manager): List details of follow-up			
Corrective Action Effective	Return to Control –	Yes	No
Further Monitoring Needed/Additional Corrective Action			
QA Approval:		Date:	



## Attachment 2

### Qualification Summary

**Attachment 1. Qualification Summary***Data Usability Evaluation - June 2020**OMC Plant 2 Site (OU4), Waukegan, Illinois*

Sample Name	Sample ID	SDG	CAS#	Analyte	Initial Result	Lab Flag	CH2M		unit	Reason Code
							Validator	Qualifier		
OMC-EB060320	ETTY6	ETTR9	67-64-1	Acetone	1.6	J		U	ug/L	EB, FB
OMC-EB060320	20CO03-72	SN4356	14797-55-8	Nitrate	0.05	U		R	mg/L	HT
OMC-EB060320	20CO03-72	SN4356	14797-65-0	Nitrite	0.05	U		R	mg/L	HT
OMC-FB060320	ETTY7	ETTR9	67-64-1	Acetone	1.8	J		U	ug/L	EB, FB
OMC-FB060320	20CO03-73	SN4356	14797-55-8	Nitrate	0.05	U		R	mg/L	HT
OMC-FB060320	20CO03-73	SN4356	14797-65-0	Nitrite	0.05	U		R	mg/L	HT
OMC-MW-11D	ETTP6	ETTP6	67-64-1	Acetone	3.1	J		U	ug/L	EB, TB
OMC-MW-11D	20CO03-01	SN4244	ALK	Alkalinity	510			J	mg/L	HT
OMC-MW-11D	20CO03-01	SN4244	14797-55-8	Nitrate	0.04	J		U	mg/L	MB
OMC-MW-11D-R	ETTP7	ETTP6	67-64-1	Acetone	2.9	J		U	ug/L	EB, TB
OMC-MW-11S	20CO03-05	SN4244	14797-55-8	Nitrate	0.065			U	mg/L	MB
OMC-MW-11S	20CO03-05	SN4244	18496-25-8	Sulfide	0.75	J		U	mg/L	EB
OMC-MW-3D	20CO03-04	SN4244	14797-55-8	Nitrate	0.2			U	mg/L	MB
OMC-MW-3S	20CO03-06	SN4244	14797-55-8	Nitrate	0.095			U	mg/L	MB
OMC-MW-3S	20CO03-06	SN4244	TOC	Total Organic Carbon	1.6			U	mg/L	MB
OMC-MW-501D	20CO03-07	SN4356	14797-55-8	Nitrate	0.12			U	mg/L	MB
OMC-MW-501S	20CO03-08	SN4356	16887-00-6	Chloride	7.3			U	mg/L	FB
OMC-MW-501S	20CO03-08	SN4356	14797-55-8	Nitrate	0.05	U		R	mg/L	HT
OMC-MW-501S	20CO03-08	SN4356	14797-65-0	Nitrite	0.05	U		R	mg/L	HT
OMC-MW-501S	20CO03-08	SN4356	14808-79-8	Sulfate	5.2			U	mg/L	EB
OMC-MW-513D	20CO03-09	SN4244	14797-55-8	Nitrate	0.034	J		U	mg/L	MB
OMC-MW-513S	20CO03-10	SN4244	14797-55-8	Nitrate	0.12			U	mg/L	MB
OMC-MW-516D	ETTP8	ETTP6	67-64-1	Acetone	1.9	J		U	ug/L	EB, TB
OMC-MW-516D	20CO03-03	SN4356	ALK	Alkalinity	940			J	mg/L	HT
OMC-MW-516D	20CO03-03	SN4356	14797-55-8	Nitrate	0.05	U		R	mg/L	MS<LCL, HT
OMC-MW-516D	20CO03-03	SN4356	14797-65-0	Nitrite	0.05	U		R	mg/L	HT
OMC-MW-516D	20CO03-03	SN4356	14808-79-8	Sulfate	0.88	J		U	mg/L	EB, FB, MB, MS/MSD<LCL
OMC-MW-516D	20CO03-03	SN4356	18496-25-8	Sulfide	0.8	J		U	mg/L	EB
OMC-MW-516S	20CO03-11	SN4356	14797-55-8	Nitrate	0.05	U		R	mg/L	HT
OMC-MW-516S	20CO03-11	SN4356	14797-65-0	Nitrite	0.05	U		R	mg/L	HT
OMC-MW-528D	20CO03-12	SN4356	74-82-8	Methane	6.5	J		U	ug/L	EB, FB
OMC-MW-528D	20CO03-12	SN4356	14797-55-8	Nitrate	1.5			J	mg/L	HT
OMC-MW-528D	20CO03-12	SN4356	14797-65-0	Nitrite	0.05	U		R	mg/L	HT
OMC-MW-528S	20CO03-13	SN4244	74-82-8	Methane	2.9	J		U	ug/L	EB
OMC-MW-528S	20CO03-13	SN4244	TOC	Total Organic Carbon	2			U	mg/L	MB
OMC-MW-600D	ETTP9	ETTP6	67-64-1	Acetone	6	J		U	ug/L	EB, TB
OMC-MW-600D	20CO03-14	SN4244	14797-55-8	Nitrate	0.039	J		U	mg/L	MB
OMC-MW-601D	ETTR1	ETTR9	67-64-1	Acetone	7.6	J		U	ug/L	EB, FB

**Attachment 1. Qualification Summary***Data Usability Evaluation - June 2020**OMC Plant 2 Site (OU4), Waukegan, Illinois*

Sample Name	Sample ID	SDG	CAS#	Analyte	Initial Result	Lab Flag	CH2M		unit	Reason Code
							Validator	Qualifier		
OMC-MW-601D	20CO03-16	SN4416	TOC	Total Organic Carbon	500			J	mg/L	HT
OMC-MW-601S	20CO03-17	SN4416	16887-00-6	Chloride	2.3			U	mg/L	FB
OMC-MW-601S	20CO03-17	SN4416	14797-65-0	Nitrite	0.12			J+	mg/L	MS>UCL
OMC-MW-601S	20CO03-17	SN4416	14808-79-8	Sulfate	12			J-	mg/L	MS<LCL
OMC-MW-601S	20CO03-17	SN4416	TOC	Total Organic Carbon	4			J	mg/L	HT
OMC-MW-602D	ETTR3	ETTR9	67-64-1	Acetone	4	J		U	ug/L	EB, FB
OMC-MW-602D	ETTR3	ETTR9	79-20-9	Methyl Acetate	33			J	ug/L	FD>RPD
OMC-MW-602D	20CO03-18	SN4356	18496-25-8	Sulfide	1.5			U	mg/L	EB
OMC-MW-602D-R	ETTR4	ETTR9	67-64-1	Acetone	3.4	J		U	ug/L	EB, FB
OMC-MW-602D-R	ETTR4	ETTR9	79-20-9	Methyl Acetate	20			J	ug/L	FD>RPD
OMC-MW-602D-R	20CO03-19	SN4356	TOC	Total Organic Carbon	51			J	mg/L	HT
OMC-MW-602S	20CO03-20	SN4285	16887-00-6	Chloride	12			U	mg/L	FB
OMC-MW-604D	20CO03-23	SN4285	74-84-0	Ethane	10	U		UJ	ug/L	pH
OMC-MW-604D	20CO03-23	SN4285	74-85-1	Ethene	850			J	ug/L	pH
OMC-MW-604D	20CO03-23	SN4285	74-82-8	Methane	320			J	ug/L	pH
OMC-MW-604D	20CO03-23	SN4285	TOC	Total Organic Carbon	370			J	mg/L	HT
OMC-MW-604S	20CO03-24	SN4285	14808-79-8	Sulfate	5.6	J		U	mg/L	EB
OMC-MW-605D	ETTS0	ETTR8	67-64-1	Acetone	7.1	J		U	ug/L	EB
OMC-MW-605D	20CO03-25	SN4356	74-85-1	Ethene	8000			J	ug/L	pH
OMC-MW-605D	20CO03-25	SN4356	74-82-8	Methane	14000			J	ug/L	pH
OMC-MW-605D	20CO03-25	SN4356	14797-55-8	Nitrate	0.05	U		R	mg/L	HT
OMC-MW-605D	20CO03-25	SN4356	14797-65-0	Nitrite	0.046	J		J	mg/L	HT
OMC-MW-605D	20CO03-25	SN4356	TOC	Total Organic Carbon	620			J	mg/L	HT
OMC-MW-605D-R	20CO03-26	SN4356	74-85-1	Ethene	8600			J	ug/L	pH
OMC-MW-605D-R	20CO03-26	SN4356	74-82-8	Methane	15000			J	ug/L	pH
OMC-MW-605D-R	20CO03-26	SN4356	14797-55-8	Nitrate	0.05	U		R	mg/L	HT
OMC-MW-605D-R	20CO03-26	SN4356	14797-65-0	Nitrite	0.035	J		J	mg/L	HT
OMC-MW-605D-R	20CO03-26	SN4356	TOC	Total Organic Carbon	600			J	mg/L	HT
OMC-MW-605S	20CO03-27	SN4356	74-82-8	Methane	6700	E		J+	mg/L	LR
OMC-MW-605S	20CO03-27	SN4356	TOC	Total Organic Carbon	5.1			J	mg/L	HT
OMC-MW-606D	20CO03-28	SN4416	74-84-0	Ethane	54			J	ug/L	pH
OMC-MW-606D	20CO03-28	SN4416	74-85-1	Ethene	780			J	ug/L	pH
OMC-MW-606D	20CO03-28	SN4416	74-82-8	Methane	24000			J	ug/L	pH
OMC-MW-606D	20CO03-28	SN4416	TOC	Total Organic Carbon	200			J	mg/L	HT
OMC-MW-606S	20CO03-29	SN4416	18496-25-8	Sulfide	1.4			U	mg/L	EB
OMC-MW-606S	20CO03-29	SN4416	TOC	Total Organic Carbon	2.7			J	mg/L	HT
OMC-MW-607D	20CO03-30	SN4416	ALK	Alkalinity	420			J	mg/L	HT
OMC-MW-607D	20CO03-30	SN4416	TOC	Total Organic Carbon	23			J	mg/L	HT

**Attachment 1. Qualification Summary**
*Data Usability Evaluation - June 2020*
*OMC Plant 2 Site (OU4), Waukegan, Illinois*

Sample Name	Sample ID	SDG	CAS#	Analyte	Initial Result	Lab Flag	CH2M		unit	Reason Code
							Validator	Qualifier		
OMC-MW-607S	20CO03-31	SN4356	16887-00-6	Chloride	4.2			U	mg/L	FB
OMC-MW-607S	20CO03-31	SN4356	14797-55-8	Nitrate	0.05	U		R	mg/L	HT
OMC-MW-607S	20CO03-31	SN4356	14797-65-0	Nitrite	0.05	U		R	mg/L	HT
OMC-MW-610D	ETTS7	ETTR8	67-64-1	Acetone	1.1	J		U	ug/L	EB, TB
OMC-MW-610S	20CO03-33	SN4285	74-82-8	Methane	9.4	J		U	ug/L	EB
OMC-MW-610S	20CO03-33	SN4285	18496-25-8	Sulfide	0.8	J		U	mg/L	EB
OMC-MW-612D	20CO03-34	SN4356	74-84-0	Ethane	780			J	ug/L	pH
OMC-MW-612D	20CO03-34	SN4356	74-85-1	Ethene	540			J	ug/L	pH
OMC-MW-612D	20CO03-34	SN4356	74-82-8	Methane	24000			J	ug/L	pH
OMC-MW-612D	20CO03-34	SN4356	14797-55-8	Nitrate	0.05	U		R	mg/L	HT
OMC-MW-612D	20CO03-34	SN4356	14797-65-0	Nitrite	0.0061	J		J	mg/L	HT
OMC-MW-612D	20CO03-34	SN4356	TOC	Total Organic Carbon	1200			J	mg/L	HT
OMC-MW-612S	ETTT0	ETTR8	67-64-1	Acetone	1	J		U	ug/L	EB, TB
OMC-MW-612S	20CO03-35	SN4356	14797-55-8	Nitrate	0.05	U		R	mg/L	HT
OMC-MW-612S	20CO03-35	SN4356	14797-65-0	Nitrite	0.05	U		R	mg/L	HT
OMC-MW-612S	20CO03-35	SN4356	18496-25-8	Sulfide	2			U	mg/L	EB
OMC-MW-612S	20CO03-35	SN4356	TOC	Total Organic Carbon	5.6			J	mg/L	HT
OMC-MW-612S-R	20CO03-36	SN4356	14797-55-8	Nitrate	0.05	U		R	mg/L	HT
OMC-MW-612S-R	20CO03-36	SN4356	14797-65-0	Nitrite	0.05	U		R	mg/L	HT
OMC-MW-612S-R	20CO03-36	SN4356	18496-25-8	Sulfide	1.1			U	mg/L	EB
OMC-MW-612S-R	20CO03-36	SN4356	TOC	Total Organic Carbon	5.4			J	mg/L	HT
OMC-MW-613D	20CO03-37	SN4356	14797-55-8	Nitrate	0.05	U		R	mg/L	HT
OMC-MW-613D	20CO03-37	SN4356	14797-65-0	Nitrite	0.05	U		R	mg/L	HT
OMC-MW-613S	20CO03-38	SN4356	16887-00-6	Chloride	9.4			U	mg/L	FB
OMC-MW-614D	ETTT4	ETTR9	67-64-1	Acetone	7.8	J		U	ug/L	EB, FB
OMC-MW-614D	20CO03-39	SN4356	18496-25-8	Sulfide	0.78	J		U	mg/L	EB
OMC-MW-614D	ETTT4	ETTR9	108-88-3	Toluene	0.77	J		U	ug/L	TB
OMC-MW-614S	20CO03-40	SN4356	16887-00-6	Chloride	16			U	mg/L	FB
OMC-MW-614S	20CO03-40	SN4356	TOC	Total Organic Carbon	6			J	mg/L	HT
OMC-MW-615D	20CO03-41	SN4244	18496-25-8	Sulfide	0.82	J		U	mg/L	EB
OMC-MW-615S	20CO03-42	SN4244	14797-55-8	Nitrate	0.091			U	mg/L	MB
OMC-MW-619D	ETTT8	ETTR8	67-64-1	Acetone	2.7	J		U	ug/L	EB, FB
OMC-MW-619D	20CO03-43	SN4356	14797-55-8	Nitrate	0.05	U		R	mg/L	HT
OMC-MW-619D	20CO03-43	SN4356	14797-65-0	Nitrite	0.05	U		R	mg/L	HT
OMC-MW-619D	20CO03-43	SN4356	18496-25-8	Sulfide	1.7			U	mg/L	EB
OMC-MW-619S	20CO03-45	SN4356	16887-00-6	Chloride	10			U	mg/L	FB
OMC-MW-619S	20CO03-45	SN4356	14797-55-8	Nitrate	0.05	U		R	mg/L	HT
OMC-MW-619S	20CO03-45	SN4356	14797-65-0	Nitrite	0.05	U		R	mg/L	HT

**Attachment 1. Qualification Summary**
*Data Usability Evaluation - June 2020*
*OMC Plant 2 Site (OU4), Waukegan, Illinois*

Sample Name	Sample ID	SDG	CAS#	Analyte	Initial Result	Lab Flag	CH2M		unit	Reason Code
							Validator	Qualifier		
OMC-MW-619S	20CO03-45	SN4356	18496-25-8	Sulfide	1.2			U	mg/L	EB
OMC-MW-620D	20CO03-46	SN4416	74-84-0	Ethane	28			J	ug/L	pH
OMC-MW-620D	20CO03-46	SN4416	74-82-8	Methane	16000			J	ug/L	pH
OMC-MW-620D	20CO03-46	SN4416	TOC	Total Organic Carbon	37			J	mg/L	HT
OMC-MW-620S	20CO03-47	SN4416	ALK	Alkalinity	410			J	mg/L	HT
OMC-MW-620S	20CO03-47	SN4416	16887-00-6	Chloride	6.7			U	mg/L	FB
OMC-MW-620S	20CO03-47	SN4416	TOC	Total Organic Carbon	4.4			J	mg/L	HT
OMC-MW-621D	20CO03-48	SN4416	74-85-1	Ethene	19000			J	ug/L	pH
OMC-MW-621D	20CO03-48	SN4416	74-82-8	Methane	15000			J	ug/L	pH
OMC-MW-621D	20CO03-48	SN4416	TOC	Total Organic Carbon	580			J	mg/L	HT
OMC-MW-621S	20CO03-49	SN4416	ALK	Alkalinity	280			J	mg/L	HT
OMC-MW-621S	20CO03-49	SN4416	16887-00-6	Chloride	190			J	mg/L	FD>RPD
OMC-MW-621S	20CO03-49	SN4416	14808-79-8	Sulfate	400			J	mg/L	FD>RPD
OMC-MW-621S	20CO03-49	SN4416	TOC	Total Organic Carbon	4.4			J	mg/L	HT
OMC-MW-621S-R	20CO03-50	SN4416	ALK	Alkalinity	250			J	mg/L	HT
OMC-MW-621S-R	20CO03-50	SN4416	16887-00-6	Chloride	94			J	mg/L	FD>RPD
OMC-MW-621S-R	20CO03-50	SN4416	14808-79-8	Sulfate	250			J	mg/L	FD>RPD
OMC-MW-621S-R	20CO03-50	SN4416	TOC	Total Organic Carbon	3.6			J	mg/L	HT
OMC-MW-623D	20CO03-51	SN4356	14797-55-8	Nitrate	0.05	U		R	mg/L	HT
OMC-MW-623D	20CO03-51	SN4356	14797-65-0	Nitrite	0.05	U		R	mg/L	HT
OMC-MW-623S	20CO03-52	SN4416	16887-00-6	Chloride	7.5			U	mg/L	FB
OMC-MW-623S	20CO03-52	SN4416	18496-25-8	Sulfide	1.1			U	mg/L	EB
OMC-MW-623S	20CO03-52	SN4416	TOC	Total Organic Carbon	2.2			J	mg/L	HT
OMC-MW-624D	20CO03-53	SN4416	TOC	Total Organic Carbon	5			J	mg/L	HT
OMC-MW-624S	20CO03-54	SN4416	16887-00-6	Chloride	2.6			U	mg/L	FB
OMC-MW-624S	20CO03-54	SN4416	18496-25-8	Sulfide	0.72	J		U	mg/L	EB
OMC-MW-624S	20CO03-54	SN4416	TOC	Total Organic Carbon	1.2			J	mg/L	HT
OMC-MW-625D	20CO03-68	SN4285	74-84-0	Ethane	36			J	ug/L	pH
OMC-MW-625D	20CO03-68	SN4285	74-85-1	Ethene	270			J	ug/L	pH
OMC-MW-625D	20CO03-68	SN4285	74-82-8	Methane	650			J	ug/L	pH
OMC-MW-625S	20CO03-69	SN4285	16887-00-6	Chloride	16			U	mg/L	FB
OMC-MW-626D	20CO03-70	SN4416	18496-25-8	Sulfide	1.5			U	mg/L	EB
OMC-MW-626D	20CO03-70	SN4416	TOC	Total Organic Carbon	11			J	mg/L	HT
OMC-MW-626S	20CO03-71	SN4356	14797-55-8	Nitrate	0.05	U		R	mg/L	HT
OMC-MW-626S	20CO03-71	SN4356	14797-65-0	Nitrite	0.05	U		R	mg/L	HT
OMC-MW-626S	20CO03-71	SN4356	TOC	Total Organic Carbon	5			J	mg/L	HT
OMC-ST-MW-1D	20CO03-57	SN4285	16887-00-6	Chloride	480	E		J+	mg/L	LR
OMC-ST-MW-1D	20CO03-57	SN4285	14808-79-8	Sulfate	200	E		J+	mg/L	LCS>UCL, LR

# Attachment 1. Qualification Summary

Data Usability Evaluation - June 2020

OMC Plant 2 Site (OU4), Waukegan, Illinois

Sample Name	Sample ID	SDG	CAS#	Analyte	Initial Result	Lab Flag	CH2M		unit	Reason Code
							Validator	Qualifier		
OMC-ST-MW-1D	20CO03-57	SN4285	18496-25-8	Sulfide	0.95	J		U	mg/L	EB
OMC-ST-MW-1S	ETTX0	ETTR8	67-64-1	Acetone	1.6	J		U	ug/L	EB, TB
OMC-ST-MW-1S	20CO03-58	SN4285	16887-00-6	Chloride	4.8			U	mg/L	FB
OMC-ST-MW-1S-R	20CO03-59	SN4285	16887-00-6	Chloride	4.7			U	mg/L	FB
OMC-ST-MW-2D	ETTX2	ETTR8	67-64-1	Acetone	1.2	J		U	ug/L	EB, FB
OMC-ST-MW-2D	20CO03-60	SN4356	16887-00-6	Chloride	110			J-	mg/L	MS<LCL
OMC-ST-MW-2D	20CO03-60	SN4356	74-82-8	Methane	3000	B		J	ug/L	pH
OMC-ST-MW-2D	20CO03-60	SN4356	14797-65-0	Nitrite	0.28			J+	mg/L	MS/MSD>UCL
OMC-ST-MW-3S	20CO03-63	SN4356	18496-25-8	Sulfide	0.95	J		U	mg/L	EB
OMC-ST-MW-4D	20CO03-64	SN4356	14797-55-8	Nitrate	0.31			J	mg/L	HT
OMC-ST-MW-4D	20CO03-64	SN4356	14797-65-0	Nitrite	0.05	U		R	mg/L	HT
OMC-ST-MW-4D	20CO03-64	SN4356	18496-25-8	Sulfide	1			U	mg/L	EB
OMC-ST-MW-4S	20CO03-65	SN4416	ALK	Alkalinity	350			J	mg/L	HT
OMC-ST-MW-4S	20CO03-65	SN4416	TOC	Total Organic Carbon	4.2			J	mg/L	HT
OMC-ST-MW-5D	20CO03-66	SN4416	ALK	Alkalinity	460			J	mg/L	HT
OMC-ST-MW-5D	20CO03-66	SN4416	14797-65-0	Nitrite	0.2			J+	mg/L	MS>UCL
OMC-ST-MW-5D	20CO03-66	SN4416	14808-79-8	Sulfate	17			J-	mg/L	MS<LCL
OMC-ST-MW-5D	20CO03-66	SN4416	TOC	Total Organic Carbon	4.4			J	mg/L	HT
OMC-ST-MW-5S	20CO03-67	SN4416	16887-00-6	Chloride	62			J-	mg/L	MS<LCL
OMC-ST-MW-5S	20CO03-67	SN4416	74-84-0	Ethane	10	U		UJ	ug/L	MS/MSD<LCL
OMC-ST-MW-5S	20CO03-67	SN4416	18496-25-8	Sulfide	0.84	J		U	mg/L	EB
OMC-ST-MW-5S	20CO03-67	SN4416	TOC	Total Organic Carbon	6.3			J	mg/L	HT
OMC-W-5	20CO03-55	SN4416	18496-25-8	Sulfide	0.93	J		U	mg/L	EB
OMC-W-5	20CO03-55	SN4416	TOC	Total Organic Carbon	2.7			J	mg/L	HT
OMC-W-5-R	20CO03-56	SN4416	ALK	Alkalinity	280			J	mg/L	HT
OMC-W-5-R	20CO03-56	SN4416	TOC	Total Organic Carbon	2.8			J	mg/L	HT

## Definitions:

ug/L = micrograms per liter; mg/L = milligrams per liter

## Reason Code Definitions:

MS/MSD<LCL = Matrix spike/Matrix spike duplicate recovery falls below Lower control limit; MS/MSD>UCL = Matrix spike/Matrix spike duplicate recovery exceeds upper control limit;

FD>RPD = field duplicate and parent sample results exceeds relative percent difference criteria; LCS>UCL = analyte in laboratory control sample exceeds the upper control limit

LR = sample result concentration exceeded linear range; pH = sample pH out of criteria

HT = hold time exceedance; EB = equipment blank contamination; FB = field blank contamination; MB = method blank contamination, TB = trip blank contamination

# Attachment 3

## ESAT Validation Narratives



**Techlaw Document Controlled Number: 83074-8-33-702-DV-1237**  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION V  
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

DATE:

SUBJECT: Review of Data  
Received for Review on: June 16, 2020

FROM: Timothy Prendiville, Branch Chief (SR-6J)  
Science and Quality Assurance Branch

TO: Data User: Jacobs  
Email Address: kaitlin.ma@jacobs.com

**This package was requested and reviewed as a Stage 2b Validation Electronic and Manual Deliverable (S2bVEM)**

We have reviewed the data for the following case:

SITE Name: Outboard Marine Corp, Waukegan Harbor Site (IL)

Case No: 48931 MA No: \_\_\_\_\_ SDG No: ETTP6

Number and Type of Samples: 20 waters (Volatiles)

Sample Numbers: ETTP6 - ETTP9, ETTQ0, ETTQ1, ETTQ4 – ETTQ9, ETTR0,  
ETTR5 – ETTR7, ETTT6, ETTT7, ETTX3, ETTY8

Laboratory: Chemtech Consulting Group (CHM) Hrs. for Review:

Following are our findings:

CC: Howard Pham  
Region 5 ESAT Contracting Officer's Representative  
Mail Code: SR-6J

Case No: 48931  
Site Name: Outboard Marine Corporation (IL)

Page 2 of 7  
SDG No: ETTP6  
Laboratory: CHM

**Below is a summary of the out-of-control audits and the possible effects on the data for this case:**

Twenty (20) preserved water samples; ETTP6 – ETTP9, ETTQ0, ETTQ1, ETTQ4 – ETTQ9, ETTR0, ETTR5 - ETTR7, ETTT6, ETTT7, ETTX3 and ETTY8, were shipped to Chemtech Consulting Group (CHM) located in Mountainside, NJ. The samples were collected 06/01-02/2020 and received intact and properly cooled 06/02-03/2020.

All samples were analyzed for the CLP Low Level VOC analytes according to CLP SOW SOM02.4 (10/2016). All sample results were reviewed according to the April 2020 QAPP Addendum 1 for OMC Waukegan Harbor Site (WA No. 228RARA-0528), September 2017 NFG for SOM02.4 (EPA-540-R-2017-002) and the Region 5 Organic CLP Validation SOP (DCN 83074 -8-33-601-DV-1143).

Sample ETTP8 was designated for the laboratory QC, i.e. MS/MSD analyses.

Sample ETTY8 was identified as a trip blank. Sample ETTP7 was identified as a field duplicate of sample ETTP6.

Only the qualifications reflected in the EXES Sample Summary report are described in this narrative.

**1. PRESERVATION AND HOLDING TIMES**

NONE FOUND.

**2. GC/MS and GC/ECD INSTRUMENT PERFORMANCE CHECK**

NONE FOUND.

**3. INITIAL CALIBRATION**

**Method – Volatile Organics**

EXES-988

The following samples are associated with an initial calibration in which a DMC did not meet relative response factor (RRF) criteria. Detects are not qualified. Nondetects are not qualified.

ETTP6, ETPP7, ETPP8, ETPP8MS, ETPP8MSD, ETPP9, ETTQ0, ETTQ1, ETTQ4,  
ETTQ5, ETTQ6, ETTQ7, ETTQ8, ETTQ9, ETTR0, ETTR5, ETTR6, ETTR7, ETTT6,  
ETTT7, ETTX3, ETTY8, VBLK66, VBLK67, VBLK68  
trans-1,3-Dichloropropene-d4

**4. INITIAL CALIBRATION VERIFICATION**

NONE FOUND.

**5. CONTINUING CALIBRATION**

**Method – Volatile Organics**

EXES-614

The following samples are associated with an opening or closing CCV with DMC RRF exceeding criteria. Detects are not qualified. Nondetects are not qualified.

ETTP6, ETPP7, ETPP8, ETPP8MS, ETPP8MSD, ETPP9, ETTQ0, ETTQ1, ETTQ4,  
ETTQ5, ETTQ6, ETTQ7, ETTQ8, ETTQ9, ETTR0, ETTR5, ETTR6, ETTR7, ETTT6,  
ETTT7, ETTX3, ETTY8, VBLK66, VBLK67  
trans-1,3-Dichloropropene-d4

**6. BLANKS**

NONE FOUND.

**7. DEUTERATED MONITORING COMPOUNDS / SURROGATES**

**Method – Volatile Organics**

EXES-792

The following samples have DMC/surrogate percent recoveries less than the primary minimum criteria but greater than or equal to the expanded minimum criteria. Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

ETTP8, ETTQ6, ETTR6DL, ETTT6, ETTX3, ETTY8  
1,1-Dichloroethene, trans-1,2-Dichloroethene, cis-1,2-Dichloroethene

EXES-982

The following samples have DMC/surrogate percent recoveries greater than the primary maximum criteria. Detects are qualified as estimated J+. Nondetects are not qualified.

ETTR6  
Acetone, 2-Butanone, 4-Methyl-2-pentanone, 2-Hexanone

ETTT6  
4-Methyl-2-pentanone, 2-Hexanone

**8. MATRIX SPIKE/MATRIX SPIKE DUPLICATE**

NONE FOUND.

**9. CLEANUP PROCEDURES**

Not applicable.

**10. LABORATORY CONTROL SAMPLE**

Not applicable.

**11. INTERNAL STANDARD**

NONE FOUND.

**12. TARGET ANALYTE QUANTITATION LIMIT**

**Method – Trace Volatiles**

The following samples had one or more target analytes that exceeded the calibration range. The affected analytes are reported from the diluted analyses and are reported with the appropriate dilution factor in the EXES Sample Summary Report.

ETTP6, ETPP7  
Vinyl chloride, cis-1,2-Dichloroethene

Case No: 48931  
Site Name: Outboard Marine Corporation (IL)

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SDG No: ETPP6  
Laboratory: CHM

ETTP8  
Benzene

ETTR6  
Vinyl chloride, Methyl acetate, cis-1,2-Dichloroethene

The following samples had one or more target analytes that exceeded the calibration range. No diluted analyses were performed. Detects are qualified as estimated J.

ETTP8MS, ETPP8MSD  
Benzene

### Method – Volatile Organics

EXES-790

The following samples have analyte results greater than or equal to method detection limit (MDL) and below contract required quantitation limit (CRQL). Detects are qualified as estimated J.

ETTP6, ETPP7  
1,1-Dichloroethene, Acetone, trans-1,2-Dichloroethene, Trichloroethene

ETTP8, ETPP8MS, ETPP8MSD, ETTQ9  
Acetone

ETTQ7  
cis-1,2-Dichloroethene

ETTR5  
Vinyl chloride

ETTR6  
1,1-Dichloroethene, trans-1,2-Dichloroethene

ETTR7  
Vinyl chloride, Methyl acetate, cis-1,2-Dichloroethene

ETTT6  
Chloroethane, trans-1,2-Dichloroethene, 2-Butanone

ETTT7  
Vinyl chloride, cis-1,2-Dichloroethene

ETTY8  
Acetone, Toluene

**13. TENTATIVELY IDENTIFIED COMPOUNDS**

Not Validated.

**14. SYSTEM PERFORMANCE**

NONE FOUND.

**15. FIELD QC SAMPLES**

Review not required under specified validation stage.

**16. SAMPLE RESULTS**

None found.

**17. QAPP COMPLIANCE**

The analytical package was compliant with the QAPP Worksheets #12, #15, #19, #35 and #36.

Validation Data Qualifier Sheet

<u>Qualifiers</u>	<u>Data Qualifier Definitions</u>
U	The analyte was analyzed for and was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the results may be biased high.
J-	The result is an estimated quantity, but the results may be biased low.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for and was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
C	The target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	The target Pesticide or Aroclor analyte identification was not confirmed when GC/MS analysis was performed.

**Techlaw Document Controlled Number: 83074-8-33-702-DV-1238**  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION V  
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

DATE:

SUBJECT: Review of Data  
Received for Review on: June 19, 2020

FROM: Timothy Prendiville, Branch Chief (SR-6J)  
Science and Quality Assurance Branch

TO: Data User: Jacobs  
Email Address: kaitlin.ma@jacobs.com

**This package was requested and reviewed as a Stage 2b Validation Electronic and Manual Deliverable (S2bVEM)**

We have reviewed the data for the following case:

SITE Name: Outboard Marine Corp, Waukegan Harbor Site (IL)

Case No: 48931 MA No: \_\_\_\_\_ SDG No: ETTP9

Number and Type of Samples: 17 waters (Aroclors)

Sample Numbers: ETTP9, ETTQ2, ETTQ3, ETTS7, ETTS8, ETTT2, ETTW5,  
ETTX0 – ETTX6, ETTX9, ETTY6, ETTY7

Laboratory: Chemtech Consulting Group (CHM) Hrs. for Review:

Following are our findings:

CC: Howard Pham  
Region 5 ESAT Contracting Officer's Representative  
Mail Code: SR-6J



Case No: 48931  
Site Name: Outboard Marine Corporation (IL)

Page 2 of 7  
SDG No: ETTP9  
Laboratory: CHM

**Below is a summary of the out-of-control audits and the possible effects on the data for this case:**

Seventeen (17) water samples; ETTP9, ETTQ2, ETTQ3, ETTS7, ETTS8, ETTT2, ETTW5, ETTX0 – ETTX6, ETTX9, ETTY6 and ETTY7, were shipped to Chemtech Consulting Group (CHM) located in Mountainside, NJ. The samples were collected 06/01-03/2020 and received intact and properly cooled 06/02-04/2020.

All samples were analyzed for the CLP Aroclor analytes according to CLP SOW SOM02.4 (10/2016. All sample results were reviewed according to the April 2020 QAPP Addendum 1 for OMC Waukegan Harbor Site (WA No. 228RARA-0528), September 2017 NFG for SOM02.4 (EPA-540-R-2017-002) and the Region 5 Organic CLP Validation SOP (DCN 83074 -8-33-601-DV-1143).

Sample ETTX2 was designated for the laboratory QC, i.e. MS/MSD analyses.

Sample ETTY6 was identified as an equipment blank. Sample ETTY7 was identified as a field blank. Sample ETTX1 is the field duplicate of ETTX0.

Only the qualifications reflected in the EXES Sample Summary report are described in this narrative.

**1. PRESERVATION AND HOLDING TIMES**

NONE FOUND.

**2. GC/MS and GC/ECD INSTRUMENT PERFORMANCE CHECK**

NONE FOUND.

**3. INITIAL CALIBRATION**

NONE FOUND.

**4. INITIAL CALIBRATION VERIFICATION**

NONE FOUND.

**5. CONTINUING CALIBRATION**

NONE FOUND.

**6. BLANKS**

NONE FOUND.

**7. DEUTERATED MONITORING COMPOUNDS / SURROGATES**

**Method – Aroclors**

EXES-795

The following samples have surrogate percent recoveries greater than the expanded maximum criteria. Detects are qualified as estimated J+. Nondetects are not qualified.

ETTQ3

Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, Aroclor-1260, Aroclor-1262, Aroclor-1268

ETTT2

Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1254, Aroclor-1260, Aroclor-1262, Aroclor-1268

ETTX0, ETTX1

Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, Aroclor-1260, Aroclor-1262, Aroclor-1268

Case No: 48931  
Site Name: Outboard Marine Corporation (IL)

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SDG No: ETTP9  
Laboratory: CHM

ETTX1DL  
Aroclor-1016

**EXES-971**

The following samples have surrogate percent recoveries greater than the primary maximum criteria but are less than or equal to the expanded maximum criteria. Detects are qualified as estimated J+. Nondetects are not qualified.

ETTP9  
Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254,  
Aroclor-1260, Aroclor-1262, Aroclor-1268

ETTT2  
Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1254, Aroclor-1260,  
Aroclor-1262, Aroclor-1268

**EXES-983**

The following diluted samples have surrogate percent recoveries less than the expanded minimum criteria. Detects are not qualified. Nondetects are not qualified.

ETTT2DL, ETTX9, ETTX9DL  
Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254,  
Aroclor-1260, Aroclor-1262, Aroclor-1268

**8. MATRIX SPIKE/MATRIX SPIKE DUPLICATE**

NONE FOUND.

**9. CLEANUP PROCEDURES**

NONE FOUND.

**10. LABORATORY CONTROL SAMPLE**

NONE FOUND.

**11. INTERNAL STANDARD**

Not Applicable.

**12. TARGET ANALYTE QUANTITATION LIMIT**

**Method – Aroclors**

Case No: 48931  
Site Name: Outboard Marine Corporation (IL)

Page 5 of 7  
SDG No: ETP9  
Laboratory: CHM

The following samples had one or more target analytes that exceeded the calibration range. The affected analytes are reported from the diluted analyses and are reported with the appropriate dilution factor in the EXES Sample Summary Report.

ETTT2, ETTX9  
Aroclor-1248

ETTX0, ETTX1  
Aroclor-1016

#### EXES-1509

The following samples have result difference between the two columns greater than 25%.  
Detects are qualified as estimated J.

ETTX0DL, ETTX1DL  
Aroclor-1016

ETTXQ3, ETTX2MS, ETTX2MSD  
Aroclor-1248

#### EXES-790

The following samples have analyte results greater than or equal to method detection limit (MDL) and below contract required quantitation limit (CRQL). Detects are qualified as estimated J.

ALCS21  
Aroclor-1260

ETTX2, ETTX4, ETTX6  
Aroclor-1248

### **13. TENTATIVELY IDENTIFIED COMPOUNDS**

Not Applicable.

### **14. SYSTEM PERFORMANCE**

NONE FOUND.

### **15. FIELD QC SAMPLES**

Review not required under specified validation stage.

Case No: 48931  
Site Name: Outboard Marine Corporation (IL)

Page 6 of 7  
SDG No: ETTP9  
Laboratory: CHM

## **16. SAMPLE RESULTS**

None found.

## **17. QAPP COMPLIANCE**

The analytical package was compliant with the QAPP Worksheets #12, #15, #19, #35 and #36.

Validation Data Qualifier Sheet

<u>Qualifiers</u>	<u>Data Qualifier Definitions</u>
U	The analyte was analyzed for and was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the results may be biased high.
J-	The result is an estimated quantity, but the results may be biased low.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for and was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
C	The target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	The target Pesticide or Aroclor analyte identification was not confirmed when GC/MS analysis was performed.

**Techlaw Document Controlled Number: 83074-8-33-702-DV-1255**  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION V  
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

DATE:

SUBJECT: Review of Data  
Received for Review on: June 19, 2020

FROM: Timothy Prendiville, Branch Chief (SR-6J)  
Science and Quality Assurance Branch

TO: Data User: Jacobs  
Email Address: kaitlin.ma@jacobs.com

**This package was requested and reviewed as a Stage 2b Validation Electronic and Manual Deliverable (S2bVEM)**

We have reviewed the data for the following case:

SITE Name: Outboard Marine Corp, Waukegan Harbor Site (IL)

Case No: 48931 MA No: \_\_\_\_\_ SDG No: ETTR8

Number and Type of Samples: 20 waters (Low/Medium Volatiles)

Sample Numbers: ETTR8, ETTS0 – ETTS2, ETTS7, ETTS8, ETTT0, ETTT1, ETTT8, ETTT9, ETTW5, ETTX0 – ETTX2, ETTX4, ETTX5, ETTX9, ETTY2, ETTY3, ETTY9

Laboratory: Chemtech Consulting Group (CHM) Hrs. for Review:

Following are our findings:

CC: Howard Pham  
Region 5 ESAT Contracting Officer's Representative  
Mail Code: SR-6J

Case No: 48931  
Site Name: Outboard Marine Corporation (IL)

Page 2 of 6  
SDG No: ETTR8  
Laboratory: CHM

**Below is a summary of the out-of-control audits and the possible effects on the data for this case:**

Twenty (20) preserved water samples; ETTR8, ETTS0 – ETTS2, ETTS7, ETTS8, ETTT0, ETTT1, ETTT8, ETTT9, ETTW5, ETTX0 – ETTX2, ETTX4, ETTX5, ETTX9, ETTY2, ETTY3 and ETTY9, were shipped to Chemtech Consulting Group (CHM) located in Mountainside, NJ. The samples were collected 06/02-03/2020 and received intact and properly cooled on 06/03-04/2020.

All samples were analyzed for the CLP VOC analytes according to CLP SOW SOM02.4 (10/2016). All sample results were reviewed according to the April 2020 QAPP Addendum 1 for OMC Waukegan Harbor Site (WA No. 228RARA-0528), September 2017 NFG for SOM02.4 (EPA-540-R-2017-002) and the Region 5 Organic CLP Validation SOP (DCN 83074 -8-33-601-DV-1143).

Sample ETTX2 was designated for the laboratory QC, i.e. MS/MSD analyses.

Sample ETTY9 was identified as a trip blank. Sample ETTS1 is a field duplicate of sample ETTS0. Sample ETTT1 is a field duplicate of sample ETTT0. Sample ETTX1 is a field duplicate of sample ETTX0.

Only the qualifications reflected in the EXES Sample Summary report are described in this narrative.



**1. PRESERVATION AND HOLDING TIMES**

NONE FOUND.

**2. GC/MS and GC/ECD INSTRUMENT PERFORMANCE CHECK**

NONE FOUND.

**3. INITIAL CALIBRATION**

**Method – Volatile Organics**

EXES-988

The following samples are associated with an initial calibration in which a DMC did not meet relative response factor (RRF) criteria. Detects are not qualified. Nondetects are not qualified.

ETTS0, ETTS1, ETTS7, ETTT0, ETTT1, ETTT9, ETTW5, ETTX0, ETTX1, ETTX2,  
ETTX2MS, ETTX2MSD, ETTX4, ETTX5, ETTX9, ETTY9, VBLK71  
trans-1,3-Dichloropropene-d4

**4. INITIAL CALIBRATION VERIFICATION**

NONE FOUND.

**5. CONTINUING CALIBRATION**

NONE FOUND.

**6. BLANKS**

NONE FOUND.

**7. DEUTERATED MONITORING COMPOUNDS / SURROGATES**

**Method – Volatile Organics**

EXES-792

The following samples have DMC/surrogate percent recoveries less than the primary minimum criteria but greater than or equal to the expanded minimum criteria. Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

ETTT9, ETTX2MSD, ETTX5  
Dichlorodifluoromethane, Chloromethane, Bromomethane, Chloroethane,  
Carbon disulfide

**8. MATRIX SPIKE/MATRIX SPIKE DUPLICATE**

NONE FOUND.

**9. CLEANUP PROCEDURES**

Not applicable.

**10. LABORATORY CONTROL SAMPLE**

Not applicable.

**11. INTERNAL STANDARD**

NONE FOUND.

**12. TARGET ANALYTE QUANTITATION LIMIT**

**Method – Volatile Organics**

The following samples had one or more target analytes that exceeded the calibration range. The affected analytes are reported from the diluted analyses and are reported with the appropriate dilution factor in the EXES Sample Summary Report.

ETTS0, ETTS1, ETTS7  
Vinyl chloride, cis-1,2-Dichloroethene

ETTX9  
cis-1,2-Dichloroethene

**EXES-790**

The following samples have analyte results greater than or equal to method detection limit (MDL) and below contract required quantitation limit (CRQL). Detects are qualified as estimated J.

ETTS0  
1,1-Dichloroethene, Acetone, Carbon disulfide, Chloroform

ETTS1  
1,1-Dichloroethene, Acetone

ETTS2  
trans-1,2-Dichloroethene

ETTS7

1,1-Dichloroethene, Acetone, trans-1,2-Dichloroethene, 1,1-Dichloroethane

ETTS8

trans-1,2-Dichloroethene

ETTT0, ETTX0, ETTX2, ETTX2MS

Vinyl chloride, Acetone

ETTT1, ETTW5, ETTX1, ETTX2MSD

Vinyl chloride

ETTT8

Chloroethane, Acetone

ETTX9

Vinyl chloride, 1,1-Dichloroethene

ETTY3

cis-1,2-Dichloroethene

ETTY9

Acetone, Toluene

### **13. TENTATIVELY IDENTIFIED COMPOUNDS**

Not Validated.

### **14. SYSTEM PERFORMANCE**

NONE FOUND.

### **15. FIELD QC SAMPLES**

Review not required under specified validation stage.

### **16. SAMPLE RESULTS**

None found.

### **17. QAPP COMPLIANCE**

The analytical package was compliant with the QAPP Worksheets #12, #15, #19, #35 and #36.

Validation Data Qualifier Sheet

<u>Qualifiers</u>	<u>Data Qualifier Definitions</u>
U	The analyte was analyzed for and was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the results may be biased high.
J-	The result is an estimated quantity, but the results may be biased low.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for and was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
C	The target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	The target Pesticide or Aroclor analyte identification was not confirmed when GC/MS analysis was performed.

**Techlaw CONTROLLED DOCUMENT NUMBER: 83074-8-33-702-DV-1245**  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION V  
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

DATE:

SUBJECT: Review of Data  
Received for Review on: June 19, 2020

FROM: Timothy Prendiville, Branch Chief (SR-6J)  
Science and Quality Assurance Branch

TO: Data User: Jacob  
Contact Person: Kaitlin.ma@jacobs.com

**This package was requested and reviewed as a Stage 2B Validation Electronic and Manual Deliverable (S2BVEM)**

We have reviewed the data for the following case:

Site Name: Outboard Marine Corporation (IL)

Case No: 48931

MA No: NA

SDG No: ETTR9

Number and Type of Samples: 20 Waters (low level VOA)

Sample Numbers: ETTQ2, ETTQ3, ETTR1 - ETTR4, ETTR9, ETTS3, ETTS4, ETTS6, ETTS9, ETTT2 -ETTT5, ETTX6, ETTY5 - ETTY7 and ETTZ0

Laboratory: Chemtech Consulting Group (CHM)

Hrs. for Review:

Following are our findings:

CC: Howard Pham  
Region 5 ESAT Contracting Officer's Representative (COR)  
Mail Code: SR-6J

**Below is a summary of the out-of-control audits and the possible effects on the data for this case:**

Twenty (20) water samples, numbered ETTQ2, ETTQ3, ETTR1 - ETTR4, ETTR9, ETTS3, ETTS4, ETTS6, ETTS9, ETTT2 -ETTT5, ETTX6, ETTY5 - ETTY7 and ETTZ0, were shipped to Chemtech Consulting Group (CHM) located in Mountainside, NJ. The samples were collected between June 2 and June 4, 2020. The samples were received between June 3 and June 5, 2020 intact and within the temperature requirement of  $\leq 6^{\circ}\text{C}$ .

All samples were analyzed for the CLP Low Level VOC analytes according to CLP SOW SOM02.4 (10/2016). All sample results were reviewed according to the April 2020 QAPP Addendum 1 for OMC Waukegan Harbor Site (WA No. 228RARA-0528), September 2017 NFG for SOM02.4 (EPA-540-R-2017-002) and the Region 5 Organic CLP Validation SOP (DCN 83074 -8-33-601-DV-1143).

Sample ETTR2 was designated by the samplers to be used for laboratory QC, i.e. MS/MSD analyses.

Sample ETTY6 was identified as an equipment blank. Sample ETTY7 was identified as the field blank. Sample ETTZ0 was identified as a trip blank.

Sample ETTR4 was identified as field duplicate of ETTR3.

Only qualifications to the final results reflected in the EXES Sample Summary are described in the narrative.

**1. PRESERVATION AND HOLDING TIMES**

No Problems found.

**2. GC/MS AND GC/ECD INSTRUMENT PERFORMANCE CHECK**

No Problems found.

**3. INITIAL CALIBRATION**

No Problems found.

**4. INITIAL CALIBRATION VERIFICATION**

No Problems found.

**5. CONTINUING CALIBRATION**

EXES-614

The following samples are associated with an opening or closing CCV with DMC RRF exceeding criteria. Detects are not qualified. Nondetects are not qualified.

ETTR1, ETTR9, ETTT4, ETTT5, VBLK79, VBLK80, VHBLK01  
trans-1,3-Dichloropropene-d4

**6. BLANKS**

No Problems found.

**7. DEUTERATED MONITORING COMPOUNDS / SURROGATES**

EXES-792

The following samples have DMC/surrogate percent recoveries less than the primary minimum criteria but greater than or equal to the expanded minimum criteria. Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

ETTS3  
1,1-Dichloroethene, trans-1,2-Dichloroethene, Trichloroethene, Toluene,  
Tetrachloroethene, Ethylbenzene, o-Xylene, m,p-Xylene, Styrene, Isopropylbenzene

ETTS4, ETTY6, ETTY7  
1,1-Dichloroethene, trans-1,2-Dichloroethene, cis-1,2-Dichloroethene

ETTS9

Dichlorodifluoromethane, Chloromethane, Bromomethane, Chloroethane,  
1,1-Dichloroethene, Carbon Disulfide, trans-1,2-Dichloroethene, cis-1,2-Dichloroethene

EXES-982

The following samples have DMC/surrogate percent recoveries greater than the primary maximum criteria. Detects are qualified as estimated J+. Nondetects are not qualified.

ETTZO

Chlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene,  
1,1,4-Trichlorobenzene, 1,2,3-Trichlorobenzene

**8. MATRIX SPIKE / MATRIX SPIKE DUPLICATE**

No Problems found.

**9. CLEANUP PROCEDURES**

Not applicable.

**10. LABORATORY CONTROL SAMPLE**

Not applicable.

**11. INTERNAL STANDARD**

No Problems found.

**12. TARGET ANALYTE QUANTITATION LIMIT**

The following volatile samples have analyte results greater than the upper limit of calibration range. Samples were re-analyzed at dilution to bring the detections within the calibration ranges.

ETTR3, ETTR4, ETTS3, ETTT4  
Vinyl chloride, cis-1,2-Dichloroethene

ETTS4  
Vinyl chloride

ETTY5  
cis-1,2-Dichloroethene, Trichloroethene

EXES-790

The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.



ETTQ2  
Vinyl chloride, Benzene

ETTQ3  
Vinyl chloride, 1,1-Dichloroethane

ETTR1  
Acetone, Carbon disulfide, 1,1-Dichloroethane

ETTR3, ETTR4  
Acetone, Carbon disulfide

ETTS3  
Carbon disulfide, trans-1,2-Dichloroethene

ETTS9  
4-Methyl-2-pentanone

ETTT3  
Trichloroethene

ETTT4  
Acetone, trans-1,2-Dichloroethene, Toluene

ETTY5  
trans-1,2-Dichloroethene

ETTY6, ETTY7, VBLK80  
Acetone

ETTZO  
Toluene

### **13. TENTATIVELY IDENTIFIED COMPOUNDS**

Review not required under specified validation stage.

### **14. SYSTEM PERFORMANCE**

No Problems found.

### **15. FIELD QC SAMPLES**

Review not required under specified validation stage.

## **16. SAMPLE RESULTS**

No Problems found.

## **17. QAPP COMPLIANCE**

The analytical package was compliant with the QAPP Worksheets #12, #15, #19, #35 & #36.

Validation Data Qualifier Sheet

Qualifiers

Data Qualifier Definitions

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the results may be biased high.
J-	The result is an estimated quantity, but the results may be biased low.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
C	The Target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	The Target Pesticide or Aroclor analyte identification was not confirmed when GC/MS analysis was performed.

**Techlaw CONTROLLED DOCUMENT NUMBER: 83074-8-33-702-DV-1246**  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION V  
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

DATE:

SUBJECT: Review of Data  
Received for Review on: June 19, 2020

FROM: Timothy Prendiville, Branch Chief (SR-6J)  
Science and Quality Assurance Branch

TO: Data User: Jacob  
Contact Person: Kaitlin.ma@jacobs.com

**This package was requested and reviewed as a Stage 2B Validation Electronic and Manual Deliverable (S2BVEM)**

We have reviewed the data for the following case:

Site Name: Outboard Marine Corporation (IL)

Case No: 48931

MA No: NA

SDG No: ETTS5

Number and Type of Samples: 16 Waters (low level VOA)

Sample Numbers: ETTS5, ETTW0 - ETTW4, ETTW6 - ETTW9, ETTX7, ETTX8, ETTY0, ETTY1, ETTY4 and ETTZ1

Laboratory: Chemtech Consulting Group (CHM)

Hrs. for Review:

Following are our findings:

CC: Howard Pham  
Region 5 ESAT Contracting Officer's Representative (COR)  
Mail Code: SR-6J

**Below is a summary of the out-of-control audits and the possible effects on the data for this case:**

Sixteen (16) water samples, numbered ETTS5, ETTW0 - ETTW4, ETTW6 - ETTW9, ETTX7, ETTX8, ETTY0, ETTY1, ETTY4 and ETTZ1, were shipped to Chemtech Consulting Group (CHM) located in Mountainside, NJ. The samples were collected June 4, 2020. The samples were received June 5, 2020 intact and within the temperature requirement of  $\leq 6^{\circ}\text{C}$ .

All samples were analyzed for the CLP Low Level VOC analytes according to CLP SOW SOM02.4 (10/2016). All sample results were reviewed according to the April 2020 QAPP Addendum 1 for OMC Waukegan Harbor Site (WA No. 228RARA-0528), September 2017 NFG for SOM02.4 (EPA-540-R-2017-002) and the Region 5 Organic CLP Validation SOP (DCN 83074 -8-33-601-DV-1143).

Sample ETTY1 was designated by the samplers to be used for laboratory QC, i.e. MS/MSD analyses.

Sample ETTZ1 was identified as a trip blank.

Samples ETTW3/ETTW4 and ETTW8/ETTW9 were identified as field duplicate pairs.

Only qualifications to the final results reflected in the EXES Sample Summary are described in the narrative.

**1. PRESERVATION AND HOLDING TIMES**

No Problems found.

**2. GC/MS AND GC/ECD INSTRUMENT PERFORMANCE CHECK**

No Problems found.

**3. INITIAL CALIBRATION**

No Problems found.

**4. INITIAL CALIBRATION VERIFICATION**

No Problems found.

**5. CONTINUING CALIBRATION**

EXES-614

The following samples are associated with an opening or closing CCV with DMC RRF exceeding criteria. Detects are not qualified. Nondetects are not qualified.

ETTS5, ETTW0, ETTW1, ETTW2, ETTW3, ETTW4, ETTW6, ETTW7, ETTW8,  
ETTW9, ETTX7, ETTX8, ETTY0, ETTY1, ETTY1MS, ETTY1MSD, ETTY4, ETTZ1,  
VBLK79, VBLK80, VBLK82, VHBLK01  
trans-1,3-Dichloropropene-d4

**6. BLANKS**

EXES-1104

The following samples have analyte results reported less than CRQLs. The associated method blank results are less than CRQLs. Detects are qualified U. Sample results have been reported at CRQLs.

ETTW0, ETTW1, ETTW3, ETTW4, ETTW7, ETTX8, ETTY4  
Acetone

**7. DEUTERATED MONITORING COMPOUNDS / SURROGATES**

EXES-792

The following samples have DMC/surrogate percent recoveries less than the primary minimum criteria but greater than or equal to the expanded minimum criteria. Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

ETTW2, ETTW9

1,1-Dichloroethene, trans-1,2-Dichloroethene, cis-1,2-Dichloroethene

ETTW6, ETTW7, ETTX7, ETTX8, ETTY0

1,1-Dichloroethene, trans-1,2-Dichloroethene, cis-1,2-Dichloroethene, Trichloroethene, Toluene, Tetrachloroethene, Ethylbenzene, o-Xylene, m,p-Xylene, Styrene, Isopropylbenzene

#### **8. MATRIX SPIKE / MATRIX SPIKE DUPLICATE**

No Problems found.

#### **9. CLEANUP PROCEDURES**

Not applicable.

#### **10. LABORATORY CONTROL SAMPLE**

Not applicable.

#### **11. INTERNAL STANDARD**

No Problems found.

#### **12. TARGET ANALYTE QUANTITATION LIMIT**

The following volatile samples have analyte results greater than the upper limit of calibration range. Samples were re-analyzed at dilution to bring the detections within the calibration ranges.

ETTS5

cis-1,2-Dichloroethene, Trichloroethene

EXES-790

The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

ETTS5

trans-1,2-Dichloroethene

ETTW0

cis-1,2-Dichloroethene, Trichloroethene

ETTW1

Methyl acetate

ETTW2, ETTY4  
Vinyl chloride

ETTX7  
Chloroform

ETTX8  
1,1-Dichloroethane

ETTY0  
Vinyl chloride, o-Xylene

ETTY1, ETTY1MS, ETTY1MSD  
Ethylbenzene, o-Xylene, m,p-Xylene

ETTZ1  
Toluene

VBLK80  
Acetone

### **13. TENTATIVELY IDENTIFIED COMPOUNDS**

Review not required under specified validation stage.

### **14. SYSTEM PERFORMANCE**

No Problems found.

### **15. FIELD QC SAMPLES**

Review not required under specified validation stage.

### **16. SAMPLE RESULTS**

No Problems found.

### **17. QAPP COMPLIANCE**

The analytical package was compliant with the QAPP Worksheets #12, #15, #19, #35 & #36.



Validation Data Qualifier Sheet

Qualifiers

Data Qualifier Definitions

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the results may be biased high.
J-	The result is an estimated quantity, but the results may be biased low.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
C	The Target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	The Target Pesticide or Aroclor analyte identification was not confirmed when GC/MS analysis was performed.

**Techlaw CONTROLLED DOCUMENT NUMBER: 83074-8-33-702-DV-1247**  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION V  
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

DATE:

SUBJECT: Review of Data  
Received for Review on: June 22, 2020

FROM: Timothy Prendiville, Branch Chief (SR-6J)  
Science and Quality Assurance Branch

TO: Data User: Jacob  
Contact Person: Kaitlin.ma@jacobs.com

**This package was requested and reviewed as a Stage 2B Validation Electronic and Manual Deliverable (S2BVEM)**

We have reviewed the data for the following case:

Site Name: Outboard Marine Corporation (IL)

Case No: 48931

MA No: NA

SDG No: ETTW6

Number and Type of Samples: 8 Waters (aroclor)

Sample Numbers: ETTW6 - ETTW9, ETTX7, ETTX8, ETTY0, ETTY1

Laboratory: Chemtech Consulting Group (CHM)

Hrs. for Review:

Following are our findings:

CC: Howard Pham  
Region 5 ESAT Contracting Officer's Representative (COR)  
Mail Code: SR-6J

**Below is a summary of the out-of-control audits and the possible effects on the data for this case:**

Eight (8) water samples, numbered ETTW6 - ETTW9, ETTX7, ETTX8, ETTY0 and ETTY1 were shipped to Chemtech Consulting Group (CHM) located in Mountainside, NJ. The samples were collected June 4, 2020. The samples were received on June 5, 2020 intact and within the temperature requirement of  $\leq 6^{\circ}\text{C}$ .

All samples were analyzed for the CLP Low Level VOC analytes according to CLP SOW SOM02.4 (10/2016). All sample results were reviewed according to the April 2020 QAPP Addendum 1 for OMC Waukegan Harbor Site (WA No. 228RARA-0528), September 2017 NFG for SOM02.4 (EPA-540-R-2017-002) and the Region 5 Organic CLP Validation SOP (DCN 83074 -8-33-601-DV-1143).

Sample ETTY1 was designated by the samplers to be used for laboratory QC, i.e. MS/MSD analyses.

No sample were identified as trip blanks, field blanks or equipment blanks.

Samples ETTW8/ETTW9 were identified as a field duplicate pair.

Only qualifications to the final results reflected in the EXES Sample Summary are described in the narrative.

**1. PRESERVATION AND HOLDING TIMES**

No Problems found.

**2. GC/MS AND GC/ECD INSTRUMENT PERFORMANCE CHECK**

No Problems found.

**3. INITIAL CALIBRATION**

No Problems found.

**4. INITIAL CALIBRATION VERIFICATION**

No Problems found.

**5. CONTINUING CALIBRATION**

No Problems found.

**6. BLANKS**

No Problems found.

**7. DEUTERATED MONITORING COMPOUNDS / SURROGATES**

**EXES-971**

The following samples have surrogate percent recoveries greater than the primary maximum criteria but are less than or equal to the expanded maximum criteria. Detects are qualified as estimated J+. Nondetects are not qualified.

ETTW6, ETTW8, ETTW9, ETTX7, ETTX8, ETTY0  
Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254,  
Aroclor-1260, 1262, Aroclor-1268

**EXES-983**

The following diluted samples have surrogate percent recoveries less than the expanded minimum criteria. Detects and nondetects are not qualified.

ETTY1DL2

**8. MATRIX SPIKE / MATRIX SPIKE DUPLICATE**

EXES-975

The following matrix/matrix spike duplicate samples have percent recoveries greater than the primary maximum criteria. Detects are qualified as estimated J. Nondetects are not qualified.

ETTY1MS, ETTY1MSD  
Aroclor-1016, Aroclor-1260

**9. CLEANUP PROCEDURES**

Not applicable.

**10. LABORATORY CONTROL SAMPLE**

No Problems found.

**11. INTERNAL STANDARD**

Not applicable.

**12. TARGET ANALYTE QUANTITATION LIMIT**

The following samples have analyte results greater than the upper limit of calibration range. Samples were re-analyzed at dilution to bring the detections within the adjusted calibration ranges.

ETTY1, ETTY1DL  
Aroclor-1242

The following samples have analyte results greater than the upper limit of calibration range. Detects are qualified J. No further dilution was performed because these samples were used for QC purpose only.

ETTY1MS, ETTY1MSD  
Aroclor-1016, Aroclor-1242

EXES-790

The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

ETTW6, ETTX7, ETTY0  
Aroclor-1242

ALCS38  
Aroclor-1260

**13. TENTATIVELY IDENTIFIED COMPOUNDS**

Not applicable.

**14. SYSTEM PERFORMANCE**

No Problems found.

**15. FIELD QC SAMPLES**

Review not required under specified validation stage.

**16. SAMPLE RESULTS**

EXES-1509

The following samples have result difference between the two columns greater than 25%.  
Detects are qualified J.

ETTX7  
Aroclor-1242

ETTY1MS, ETTY1MSD  
Aroclor-1260

**17. QAPP COMPLIANCE**

The analytical package was compliant with the QAPP Worksheets #12, #15, #19, #35 & #36.

Validation Data Qualifier Sheet

Qualifiers

Data Qualifier Definitions

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the results may be biased high.
J-	The result is an estimated quantity, but the results may be biased low.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
C	The Target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	The Target Pesticide or Aroclor analyte identification was not confirmed when GC/MS analysis was performed.

**Techlaw Document Controlled Number: 83074-8-33-702-DV-1230**  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION V  
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

**DATE:** 06/26/2020

**SUBJECT:** Review of Data  
Received for review on 06/16/2020

**FROM:** Timothy Prendiville, Branch Chief (SR-6J)  
Science and Quality Assurance Branch

**TO:** Data User: Jacobs  
Contact Person: Kaitlin.ma@jacobs.com

**This package was requested and reviewed as a Stage 2B Validation Electronic and Manual Deliverable (S2BVEM)**

**We have reviewed the data for the following case:**

**Site Name:** Outboard Marine Corp. (IL)

**Case Number:** 48931 **SDG Number:** METTP6

**Number and Type of Samples:** 20 waters (ICP/AES)

**Sample Numbers:** METTP6-P9, Q0-Q1, Q4-Q9, R0, R5-R8, T6-T7

**Laboratory:** Chemtech **Hrs. for Review:** \_\_\_\_\_

**Following are our findings:**

CC: Howard Pham  
Region 5 ESAT Contracting Officer's Representative (COR)  
Mail Code: SR-6J



**Below is a summary of the out-of-control audits and the possible effects on the data for this case:**

Twenty (20) water samples, numbered METTP6-P9, Q0-Q1, Q4-Q9, R0, R5-R8 and T6-T7, were collected June 1 and June 2, 2020. The lab received the samples on June 2 and June 3, 2020 in good condition. All samples were analyzed for arsenic, iron and manganese. All samples were analyzed using the CLP SOW ISM02.4 analysis procedures. The data were reviewed according to the April 2020 QAPP Addendum 1 for OMC Waukegan Harbor Site (WA No. 228-RARA-0528), January 2017 NFG for ISM02.4 (EPA-540-R-2017-001) and the Region 5 Inorganic CLP Validation, DCN/SOP 83074-8-33-607-SO-1138. All analyses were performed using an Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES) procedure.

No samples were identified as field blanks. METTP6/METTP7 is field duplicate.

Only the qualifications reflected in the EXES Sample Summary report are described in this narrative.

**1. HOLDING TIMES AND PRESERVATION:**

No defects were found.

**2. CALIBRATIONS:**

No defects were found.

**3. BLANKS:**

**EXES-476**

**Defect Message:** The following samples have analyte results less than or equal to CRQLs. The associated ICB analyte results are less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Arsenic

METTQ0, METTQ4, METTQ5, METTQ6, METTQ7, METTQ8, METTR0,  
METTR6

**EXES-478/EXES 479**

The following inorganic samples are associated with an ICB/CCB or preparation blank concentration which is greater than the method detection limit (MDL). The sample result is greater than the MDL.

Hits greater than the CRQL but less than 5 times the blank are qualified "J+".

Arsenic

METTP6, METTP7, METTR5, METTR8, METTT7, METTX3

**4. MATRIX SPIKE/MATRIX SPIKE DUPLICATE AND LAB CONTROL SAMPLE:**

No defects were found.

**5. LABORATORY AND FIELD DUPLICATE:**

No defects were found.

**6. ANALYSIS:**

**EXES-1334**

**Defect Message:** The following samples are associated to the Serial Dilution sample with analyte %D >10% and the original sample result is > 50xMDL. Detects are qualified as estimated J. Non-detects are qualified estimated UJ.

Iron

METTP6, METTP7, METTP8, METTP9, METTQ0, METTQ1, METTQ4,  
METTQ5, METTQ6, METTQ7, METTQ8, METTQ9, METTR0, METTR5,  
METTR6, METTR7, METTR8, METTT6, METTT7, METTX3

**7. SAMPLE RESULTS:**

**EXES-790**

**Defect Message:** The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Manganese

METTQ5, METTQ7

**8. QAPP COMPLIANCE:**

The analytical package was compliant with QAPP Worksheets #12, #15, #19, #35, and #36.

**EXES ISM02.4 Data Qualifier Sheet**

<u>Qualifiers</u>	<u>Data Qualifier Definitions</u>
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

**Techlaw Document Controlled Number: 83074-8-33-702-DV-1231**  
**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**REGION V**  
**SUPERFUND AND EMERGENCY MANAGEMENT DIVISION**

**DATE:** 06/29/2020

**SUBJECT:** Review of Data  
Received for review on 06/16/2020

**FROM:** Timothy Prendiville, Branch Chief (SR-6J)  
Science and Quality Assurance Branch

**TO:** Data User: Jacobs  
Contact Person: Kaitlin.ma@jacobs.com

**This package was requested and reviewed as a Stage 2B Validation Electronic and Manual Deliverable (S2BVEM)**

**We have reviewed the data for the following case:**

**Site Name:** Outboard Marine Corp. (IL)

**Case Number:** 48931 **SDG Number:** METTQ2

**Number and Type of Samples:** 20 waters (ICP/AES)

**Sample Numbers:** METTQ2-Q3, R1-R4, S3-S6, S9, T2-T4, X6, W0-W1, Y5-Y7

**Laboratory:** Chemtech **Hrs. for Review:** \_\_\_\_\_

**Following are our findings:**

CC: Howard Pham  
Region 5 ESAT Contracting Officer's Representative (COR)  
Mail Code: SR-6J

**Below is a summary of the out-of-control audits and the possible effects on the data for this case:**

Twenty (20) water samples, numbered METTQ2-Q3, R1-R4, S3-S6, S9, T2-T4, X6, W0-W1, Y5-Y7, were collected June 3 and June 4, 2020. The lab received the samples June 4 and June 5, 2020 in good condition. All samples were analyzed for arsenic, iron and manganese. All samples were analyzed using the CLP SOW ISM02.4 analysis procedures. The data were reviewed according to the April 2020 QAPP Addendum 1 for OMC Waukegan Harbor Site (WA No. 228-RARA-0528), January 2017 NFG for ISM02.4 (EPA-540-R-2017-001) and the Region 5 Inorganic CLP Validation, DCN/SOP 83074-8-33-607-SO-1138. All analyses were performed using an Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES) procedure.

METTY6 was identified as equipment blank and METTY7 was identified as field blank. METTR3 and METTR4 were identified as field duplicates.

Only the qualifications reflected in the EXES Sample Summary report are described in this narrative.

**1. HOLDING TIMES AND PRESERVATION:**

No defects were found.

**2. CALIBRATIONS:**

No defects were found.

**3. BLANKS:**

**EXES-476**

**Defect Message:** The following samples have analyte results less than or equal to CRQLs. The associated ICB analyte results are less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Arsenic

METTS4, METTS6, METTY6

**EXES-478/479**

The following inorganic samples are associated with an ICB/CCB or preparation blank concentration which is greater than the method detection limit (MDL). The sample result is greater than the MDL.

Hits greater than the CRQL but less than 5 times the blank are qualified "J+".

Arsenic

METTR1, METTR2, METTR3, METTR4, METTS5, METTS9, METTT2,  
METTT3, METTT4, METTW0, METTX6, METTY5

**4. MATRIX SPIKE/MATRIX SPIKE DUPLICATE AND LAB CONTROL SAMPLE:**

No defects were found.

**5. LABORATORY AND FIELD DUPLICATE:**

No defects were found.

**6. ANALYSIS:**

No defects were found.

**7. SAMPLE RESULTS:**

**EXES-790**

**Defect Message:** The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Iron  
METTS4

Manganese  
METTX6

8. **QAPP COMPLIANCE:**

The analytical package was compliant with QAPP Worksheets #12, #15, #19, #35, and #36.



**EXES ISM02.4 Data Qualifier Sheet**

<u>Qualifiers</u>	<u>Data Qualifier Definitions</u>
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

**Techlaw Document Controlled Number: 83074-8-33-702-DV-1232**  
**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**REGION V**  
**SUPERFUND AND EMERGENCY MANAGEMENT DIVISION**

**DATE:** 06/29/2020

**SUBJECT:** Review of Data  
Received for review on 06/16/2020

**FROM:** Timothy Prendiville, Branch Chief (SR-6J)  
Science and Quality Assurance Branch

**TO:** Data User: Jacobs  
Contact Person: Kaitlin.ma@jacobs.com

**This package was requested and reviewed as a Stage 2B Validation Electronic and Manual Deliverable (S2BVEM)**

**We have reviewed the data for the following case:**

**Site Name:** Outboard Marine Corp. (IL)

**Case Number:** 48931 **SDG Number:** METTR9

**Number and Type of Samples:** 20 waters (ICP/AES)

**Sample Numbers:** METTR9, S0-S2, S7-S8, T0-T1, T5, T8-T9, X0-X2, X4-X5, X9, W5, Y2-Y3

**Laboratory:** Chemtech **Hrs. for Review:** \_\_\_\_\_

**Following are our findings:**

CC: Howard Pham  
Region 5 ESAT Contracting Officer's Representative (COR)  
Mail Code: SR-6J

**Below is a summary of the out-of-control audits and the possible effects on the data for this case:**

Twenty (20) water samples, numbered METTR9, S0-S2, S7-S8, T0-T1, T5, T8-T9, X0-X2, X4-X5, X9, W5 and Y2-Y3, were collected June 2 and June 3, 2020. The lab received the samples on June 3 and June 4, 2020 in good condition. All samples were analyzed for arsenic, iron and manganese. All samples were analyzed using the CLP SOW ISM02.4 analysis procedures. The data were reviewed according to the April 2020 QAPP Addendum 1 for OMC Waukegan Harbor Site (WA No. 228-RARA-0528), January 2017 NFG for ISM02.4 (EPA-540-R-2017-001) and the Region 5 Inorganic CLP Validation, DCN/SOP 83074-8-33-607-SO-1138. All analyses were performed using an Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES) procedure.

No samples were identified as field blanks. METTS0/METTS1 and METTX0/METTX1 were identified as field duplicate pairs. No defects were found for the field duplicate samples.

Only the qualifications reflected in the EXES Sample Summary report are described in this narrative.

**1. HOLDING TIMES AND PRESERVATION:**

No defects were found.

**2. CALIBRATIONS:**

No defects were found.

**3. BLANKS:**

**EXES-476**

**Defect Message:** The following samples have analyte results less than or equal to CRQLs. The associated ICB analyte results are less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Arsenic

METTS0, METTS7, METTT5, METTT8, METTT9, METTW5, METTX0,  
METTX1, METTX4, METTY2, METTY3

The following inorganic samples are associated with an ICB/CCB or preparation blank concentration which is greater than the method detection limit (MDL). The sample result is greater than the MDL.

Hits greater than the CRQL but less than 5 times the blank are qualified "J+".

Arsenic

METTS2, METTT0, METTT1, METTX2, METTX5, METTX9

**4. MATRIX SPIKE/MATRIX SPIKE DUPLICATE AND LAB CONTROL SAMPLE:**

No defects were found.

**5. LABORATORY AND FIELD DUPLICATE:**

No defects were found.

**6. ANALYSIS:**

**EXES-1334**

**Defect Message:** The following samples are associated to the Serial Dilution sample with analyte %D >10% and the original sample result is > 50xMDL. Detects are qualified as estimated J. Non-detects are qualified estimated UJ.

Iron

METTR9, METTS0, METTS1, METTS2, METTS7, METTS8, METTT0,  
METTT1, METTT5, METTT8, METTT9, METTW5, METTX0, METTX1,  
METTX2, METTX4, METTX5, METTX9, METTY2, METTY3

**7.      SAMPLE RESULTS:**

**EXES-790**

**Defect Message:** The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Manganese  
METTS8

**8.      QAPP COMPLIANCE:**

The analytical package was compliant with QAPP Worksheets #12, #15, #19, #35, and #36.

**EXES ISM02.4 Data Qualifier Sheet**

<u>Qualifiers</u>	<u>Data Qualifier Definitions</u>
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

**Techlaw Document Controlled Number: 83074-8-33-702-DV-1233**  
**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**REGION V**  
**SUPERFUND AND EMERGENCY MANAGEMENT DIVISION**

**DATE:** 06/29/2020

**SUBJECT:** Review of Data  
Received for review on 06/16/2020

**FROM:** Timothy Prendiville, Branch Chief (SR-6J)  
Science and Quality Assurance Branch

**TO:** Data User: Jacobs  
Contact Person: Kaitlin.ma@jacobs.com

**This package was requested and reviewed as a Stage 2B Validation Electronic and Manual Deliverable (S2BVEM)**

**We have reviewed the data for the following case:**

**Site Name:** Outboard Marine Corp. (IL)

**Case Number:** 48931 **SDG Number:** METTW2

**Number and Type of Samples:** 12 waters (ICP/AES)

**Sample Numbers:** METTX7-X8, W2-W4, W6-W9, Y0-Y1, Y4

**Laboratory:** Chemtech **Hrs. for Review:**

**Following are our findings:**

CC: Howard Pham  
Region 5 ESAT Contracting Officer's Representative (COR)  
Mail Code: SR-6J

**Below is a summary of the out-of-control audits and the possible effects on the data for this case:**

Twelve (12) water samples, numbered METTX7-X8, W2-W4, W6-W9, Y0-Y1 and Y4, were collected June 4, 2020. The lab received the samples on June 5, 2020 in good condition. All samples were analyzed for arsenic, iron and manganese. All samples were analyzed using the CLP SOW ISM02.4 analysis procedures. The data were reviewed according to the April 2020 QAPP Addendum 1 for OMC Waukegan Harbor Site (WA No. 228-RARA-0528), January 2017 NFG for ISM02.4 (EPA-540-R-2017-001) and the Region 5 Inorganic CLP Validation, DCN/SOP 83074-8-33-607-SO-1138. All analyses were performed using an Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES) procedure.

No samples were identified as field blanks. METTW3/METTW4 and METTW8/METTW9 are field duplicate pairs.

Only the qualifications reflected in the EXES Sample Summary report are described in this narrative.



**1.      HOLDING TIMES AND PRESERVATION:**

No defects were found.

**2.      CALIBRATIONS:**

No defects were found.

**3.      BLANKS:**

No defects were found.

**4.      MATRIX SPIKE/MATRIX SPIKE DUPLICATE AND LAB CONTROL SAMPLE:**

No defects were found.

**5.      LABORATORY AND FIELD DUPLICATE:**

The following inorganic analytes are associated with field duplicate results which did not meet technical data validation criteria; however, no sample results are qualified for field duplicates.

METTW3/METTW4  
Iron, Manganese

**6.      ANALYSIS:**

No defects were found.

**7.      SAMPLE RESULTS:**

**EXES-790**

**Defect Message:** The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Arsenic  
METTW7, METTW8, METTW9

**8.      QAPP COMPLIANCE:**

The analytical package was compliant with QAPP Worksheets #12, #15, #19, #35, and #36.

## **EXES ISM02.4 Data Qualifier Sheet**

<u>Qualifiers</u>	<u>Data Qualifier Definitions</u>
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.